F. W. SOLVER.

F. W. SOLVER,

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"A Tale of Isolde."

Frontispiece (see Page 585) F. Benedict Herzog.

Complete Self-Instructing Library of Practical Photography

VOLUME VIII

Studio Portraiture

PART II

Studio System

J. B. SCHRIEVER
Editor-in-Chief

Popular Edition

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INTRODUCTORY CHAPTER.

Portrait Composition.

By "Sidney Allan" (Sadakichi Hartmann).

Composition is synonymous with artistic invention, the ability to delineate objects in such a way that we are impressed with the fidelity of representation, and at the same time derive an esthetic satisfaction from the manner and style in which it is accomplished.

This faculty seems to be with most photographers a result of experience rather than of a serious and prolonged study of the laws of composition. They acquire it by hard work and constant application. It is with them in most cases a matter of unconscious self-education, of keeping their eyes open, of learning wherever they can in the daily routine of the studio, of continually enriching their store of former knowledge, and of reasoning out for themselves why they like one art expression and dislike another. All that is necessary to possess at the the start (besides technical proficiency) is good taste, or an instinctive feeling for what is correct or best. It is a natural gift, just as the gift of poetry or song in others, and can easily be cultivated and improved upon by the study of a large variety of good pictorial work, by analyzing each picture and trying to discover the reason why and how such work impresses one as being beautiful.

Gradually as the mind becomes more and more conscious of those laws that underlie judgment and selection, a mastery of composition will be attained, but this cannot be acquired, in my opinion, without a clear knowledge of the fundamental principles of composition. It is not the question how it may be acquired, whether by perseverance and adaptability or by analytical study. The argument is solely, that a thorough knowledge of composition is indispensable for the production of beautiful and convincing results.

My object, in this chapter, is largely to apply the fundamental principles to a series of prints, by a few well-known American professionals, that accompany this article; to point out their merits and shortcomings; to analyze the laws that underlie their pictorial arrangement, and to discover their note of individuality.

To begin with, no matter what the medium, a portrait should be a likeness first of all, and when the artist fails in this, you may be sure that he has not the right conception of the vocation of portraiture. All great portrait painters have striven with all their energy and dexterity to accomplish that end. Tizian's "Man With the Glove," or Rembrandt's "Saskia" (only to mention a few examples) Raphael's "Pope Julius II," Holbein's "Henry the VIII," are at the first glance convincing; their sincerity is unmistakable; though the originals are dead for centuries, yet one would swear to the accuracy of their likeness. Among contemporary painters Lenbach's "Bismarck" and Whistler's portrait of his mother are masterpieces in the delineation of character; John Sargent's portrait of Wertheimer is the very man himself; and the many canvases of Watts, Bonnat, Zorn, Blanche, etc., are full of individuality. It is not necessary to see the originals, so plainly do most of them convey the natural aspect of the sitters.

Professional photography in its endeavor to please its clientele has frequently neglected to make the most artistic use of personality. The public is too easily carried away

by the flattery of smoothing wrinkles, of softening irregularities of anatomical construction, and subduing disagreeable facts of nature. And there will always be fashionable photographers who will cater to these weaknesses and idiosyncracies of the public and ignore the more truthful efforts of those craftsmen of the camera that aspire to higher ideals.

The most essential quality in portraiture is simplicity. The bust portrait, which concentrates all effort solely upon the head (Figs 2 and 11), still represents the *classic* style of portraiture.

Simplicity in pose, expression and accessories is always desirable. The photographer should represent the personality of the sitter and endeavor to lose as little from his individuality as possible. In objectivity lies the greatness of all portraiture. The accessories should be aids to the composition, not hindrances. Everything should be subservient to the character and type, and all details of dress and furniture should lead up to the face, the "point of interest." As Arthur Hoeber has so aptly said, "we are accustomed to seeing our friends in the quiet refinement of private houses; they should not, when photographed, appear in uncomfortable finery or be surrounded by unfamiliar objects, with which they could not, under any ordinary circumstances, have any possible association."

The portraits of Plate I are all four noteworthy examples of simple and unaffected treatment. They show the sitter from a characteristic viewpoint, and convey all the necessary minutiae of detail with subtle deliberation. There are, broadly speaking, two phases of representation possible, one that shows the face, or the face and the figure as directly as possible against a simple background without any accessories, excepting, perhaps, a chair or a piece of wearing apparel (this style is represented in Figures 2, 3 and 4); or second, home portraiture, where the figure is shown in natural environment as in Figure 5. The latter style opens up a wider scope for composition. It is, of

course, easily possible to render such pictures confused and inartistic by an indiscriminate use of the overcrowded furnishings of our interiors. But if well arranged and typical of the subject of the painting, it is a great advance from the studio effect with scenic background, curtains, stucco relief-work and over-ornamented chairs. It enables the photographer, not less than the painter, to accentuate the personality of the sitter by a characteristic natural atmosphere. Home portraiture has come to stay, but unfortunately it is frequently subject to over-arrangement.

The home portraitists are apt to think that no picture can be artistic unless his models are dressed in the costumes of some by-gone periods, and he creates an alien and totally artificial atmosphere.

The "Portrait Study" by Bessie Buehrman (Fig. 5) is not quite free from this criticism. Costumes and surroundings, however carefully they may be chosen, are after all, only secondary attributes in a portrait, and unless the operator has the skill to light the face in such a way that it remains the main attraction, little is gained by the mere representation of an interior or beautiful accessories. Apparently, Miss Buehrman favors arrangements in slanting lines. They break up the space better than horizontal and vertical ones, and adapt themselves more readily to picturesqueness of effect. The pose of the girl is a graceful one. She is slightly out of proportion, and the left arm looks entirely too long, but one hardly notices these shortcomings. The tonal arrangement envelopes all details in an atmosphere of harmony, and the light coming from some unknown source (one of the greatest charms of home portraiture) accentuates the figure just enough to make it the principal object of interest.

In the other three portraits the attention from the main effect is in no way diverted by any desire to note or emphasize accessories. The chair in the "Portrait of an Old Lady," by the Towles Studio, is a trifle conspicuous, but it is subdued in the finished prints which appears on page

Examples in Portrait Composition.

Fig. 2. "Baroness de Guyll"
Henry H. Pierce

Fig. 3. "Mrs. Arnold Daly"
Davis and Eickemeyer

Fig. 4. Portrait of an Old Lady
Towles Studio

Fig. 5. "Portrait Study"
Bessie Buehrman

65. This portrait is really excellent as a specimen of tonal composition, as well as a human document. The figure of the old woman speaks for itself. Does not every feature bear testimony to the fact that the photographer has caught the very essence of her individuality! Her form is invested with an elegance and a distinction quite unusual. The human note, which is so often missing, is there. It is a sympathetic delineation, which has examined the features critically and realized something of the character and soul of the sitter.

As a composition it is simplicity itself. The clear profile view of a sitting figure is always effective. The lines flow easily and the embroidery of the dress is finely indicated. The way the light has been concentrated upon the face, leaving the remainder of the picture to the subtle dark gradations, is a clever performance. I would like to see the shape of the hands more definite, but if the small space they occupy would have been larger and still as light as it is now, they might have distracted the interest from the face. The attitude of the upper part of he body impresses one as looking a trifle too stiff. It is difficult to discern whether this is a peculiarity of the sitter or of the special pose. This is the only shortcoming, if such it is.

I believe this picture proves clearly that the simpler the means are, the more astonishing the effect will be. The plainest arrangement is sufficient to fix a character or to create an impression of the corporeal, for the modern eye, that delights in Whistler, is accustomed to value artistic mastery when it is expressed with bold directness.

The portrait of the "Baroness de Guyll," by Henry Havelock Pierce (Fig. 2), I would call a typical specimen of American portraiture, when it is at its best. It is straightforward, yet delicate and refined, and excellent in tonal quality. The complexion is rather smooth, but it has the charm of not being over-retouched. The modeling is well preserved; it suggests roundness with all the subtle variations of plastic form.

Vanity is a characteristic of human nature, and we are all vain enough to want to look prettier than we really are. How to change this I really cannot see.

I do not think that there is really any objection to the photographer playing the part of the "Fountain of Youth" to take out wrinkles and remove blemishes. If a woman has a drooping eyelid, if otherwise very pretty, why not be merciful and throw it into shadow so that it becomes unnoticeable. In the same way why be cruel if a man has a crooked nose, if it can be easily high-lighted so that its contour will be lost against the cheek. What we ought to consider is, whether we could not be more judicious in our flattery, and use greater skill and thought in carrying it out. I feel sure that if a better standard were established on this point, an all-round good would result, alike to the retoucher, the photographer, and the general public. The shape and quality of a touch should be entirely governed by the shape and quality of the blemish; neither should the touch, however free from mannerism, be too positive and defined, as this will tend to destroy the quality of the skin, and I may say that in my humble opinion the skin is a very important factor in any portrait. Regulation touches will give you what is called texture, or grain, but they will not give skin; and the point to be considered is, do we prefer an artificial texture, or do we prefer the natural aspect of skin.

The even lighting of the face in Fig. 2 is beautifully managed. I feel that, in general, exaggerated lighting of the head is a detriment. I feel that as far as possible a softer treatment of the head is a little better than those extremely round heads. I like strong lighting for strong, rugged faces (Figs. 10, 11), but ordinarily you will get nearer to the illusion of life, to the effect of nature as you see it in the streets where you meet people in public places, if you have a softer and more diffused light (Figs. 2, 15). Precision of form, however, should be preserved. It is essential for character delineation, and portraits like Figs.

PLATE II

Examples in Portrait Composition.

Fig. 6. "Miss Demorest"
A. F. Bradley

Fig. 7. "The Picture Book"
Davis and Eickemeyer

Fig. 8. "Companions"
Henry Hall

Fig. 9. "Master Gerald Philbin"
Davis and Eickemeyer

3, 4, 9, 10 and 11 are to be preferred to more impressionistic renderings like Figs. 5, 12, 13 and 16.

Nearly all the leading photographers work with a small, but strong, source of light. The striving for effect in a limited scale of tones, which has been introduced by the extreme portraitists is only the reaction from the old time photograph when the scale of tones extended to 16-20 gradations, commencing with white paper for the strongest high-lights and ending with black in the shadows. The right thing seems to be a halt somewhere between the two extremes.

In Figure 3, the portrait of "Mrs. Arnold Daly," by Davis and Eickemeyer, the lighting is a trifle colder and harsher than in Fig. 2. The minutiae of modeling are not quite as subtle, but the facial expression has the merit of being more spontaneous. The light scheme represents a similar problem as in Fig. 4; it is concentrated upon the face, but as there was less opportunity for line in the rendering of the furs, the photographer wisely arrayed a diffused play of light in the figure and thereby avoided monotony. The triangular space arrangement of the silhouette against the dark background is skillfully managed. The texture of the fur is well rendered and sufficiently subdued to avoid monotony of effect.

Many photographers seem to consider the representation of texture of fabrics a detriment. I think that it is at times a beautiful adjunct. Perfect clearness as in Figs. 6 and 14 may not always be desirable. It is true only as a record and can claim no artistic importance. But if represented in a subdued way as in Fig. 2, where it is, despite its profusion and distinctness, subordinated to the face, it helps the pictorial quality of the picture.

Child portraiture, of which you see a few examples on Plate II, is apt to have a story-telling quality to it, or at least to resemble a genre study. Amateur photography has made a big inroad into this particular branch of portraiture. It is easy to take a snapshot, and no matter how badly the

result may turn out it will always prove of interest to those who are immediately concerned with it. The amateur picture generally has something which is lacking in the studio print—a certain intimate flavor and naturalness which is sure to exercise a special charm upon parents and relatives and all those who are familiar with the individual ways of the child portrayed. The professional photographer cannot compete with this quality, even if he indulges in home portraiture. It is beyond his reach.

The professional is forced to photograph children very much the same way as he does adults. Of course the scope is wider. There is much more chance for arrangement and composition. A child can be taken in almost any kind of a position. Generally the photographer is restricted in the management of the feet and the legs. A little boy you can place unceremoniously on the floor, give him some plaything, and make your exposure. But never forget that this unceremonious treatment demands greater, or at least a more specialized, knowledge of composition. Also that the more vivid the action you wish the figure to assume the more chance there will be of a failure.

The simple bust portrait, and the stereotype sitting and standing positions (Fig. 6, for instance) are, after all, the most reliable. The tendency is luckily for an increased naturalness in the posing. In home portraiture the parents of the young sitters are apt to let the photographer do what he likes with their children. Figs. 7 and 8 are examples of this method.

There is one technical peculiarity which should really regulate all efforts in this direction, and furnishes the fundamental basis to work upon. And this is really in the nature of a deficiency, namely, that the light in the ordinary studio is seldom good enough for very brief exposures, which would be the ideal condition for the fleeting expressions of a child's face. For that reason, and solely for that reason, all attempts at depicting animated expression, motion and vivacity (as occur so often in the life of children) should be left

to out-door photography. Henry Hall in his "Companions," Fig. 8, gives us a charming version of a little boy. The attitude is naturalness itself, but it represents less the likeness of the face than a likeness of the whole body. The pose attracts immediate attention, and the photographer showed good judgment in blurring the form of the cat. This rectangular division of space considerably helps the composition.

Indoor photography, whether studio or home exposure, must content itself with dignified compositions and the getting of likeness, a composite expression of all the various expressions that might interest in the faces of our little ones. This we see in A. F. Bradley's "Miss Demorest" (Fig. 6). It is a trifle stiff, but after all, as far as pose and detail are concerned, a capital example of child portraiture.

"The Picture Book" (Fig. 7) and "Portrait of Master Gerald Philbin" (Fig. 9), by Davis and Eickemeyer, seem to pursue that golden middle way. Fig. 7 is an excellent combination of a picture and a portrait. The figure is well placed. It gives the impression as if the little girl is actually seated in a room. The simpler, subdued pattern of the carpet and curtain, and of the dress, offers enough variety and contrast to set off the uniform tint of the face.

The flatter the tints of a face are the more easily does it hold the eye as an important spot in the composition. As soon as a face shows decided contrast, no matter how subtle the gradations may be, the background has to be very plain. In Fig. 9 the face shows strong modeling. I believe the picture would be better if it were less pronounced and carried out in a more uniform tint. It would represent a larger middle tint plane and at once fascinate the eye, but as it is the rabbit attracts an equal amount of attention. This optical peculiarity can also be studied in Figs. 2 and 3. The modeling in the face of Fig. 2 is rather decided and would not stand more contrast in the dress or background, while the face of Mrs. Arnold Daly, if it showed stronger contrasts of light, would at once lose its interest. An absolute

correct rendering of values, i. e., the relation of the tonal gradations (of the various objects represented) to each other is most desirable, but it should never be permitted to give the face a secondary place of importance.

The portraitist must subdue all minor interests to the face. Only then the problem of tonal arrangement in portraiture can be solved. It consists largely of a right sense of proportion, to understand the beauty of different degrees of light and dark planes, of middle tints and gradations; the relation of these features in regard to size and shape against each other, and finally, to bring them into full play in each new effect. The problem is a new one with every sitter, but it should invariably be managed in such a way that the face is the main point of attraction, and not, as is so often the case, compete with the hands, some piece of apparel, furniture, or any object of minor importance.

On Plate III we have four examples of man portraiture. They were all made by professionals, two of whom, however, have come from the ranks of the pictorialists. I refer to the portraits by Bessie Buehrman (Fig. 13), and by Arnold Genthe (Fig. 12).

On the whole I consider the direct realistic style of Pirie MacDonald (Fig. 11) or of H. J. Leonard (Fig. 10) preferable to the soft and blurred style of the other two. Many photographers seem to be of the opinion that the portraiture of men is more restricted than that of women; that there is less chance for the display of artistic qualities. This argument hardly holds good. Women are, of course, more picturesque; they can be placed more easily in beautiful surroundings, and their hats and gowns, trains, drapery and scarfs allow a more free and graceful method of arrangement. But as subjects they are not a bit more pictorial than men.

Men, more angular in line and form, and without any variety of contrast in their dress, on the other hand, offer a much richer harvest in characteristic attitudes and strong individual facial expressions. For instantaneous character

Examples in Portrait Composition.

Fig. 10. Portrait Study
H. J. Leonard

Fig. 11. Portrait Study
Pirie MacDonald

Fig. 12. "Peter Robertson"
Arnold Genthe

Fig. 13. Portrait Study
Bessie Buehrman

expressions, in which every feature is pulsating life, the faces of men are to be preferred. They also lend themselves more readily to bolder schemes of lighting, as the rugged facial planes show a more definite play of light and shadows.

Pirie MacDonald has realized this quality perhaps better than any other photographer. He only photographs men, and in recent years has concentrated himself more and more upon bust portraits with a plain background.

Notice the largeness of the space which the face occupies (Fig. 11), and how he has reduced the representation of the body to a mere suggestion. Comparatively few portraitists develop a style so pronounced that it is recognizable at the first glance.

Pirie MacDonald has not only created a style of his own, but has made it academic; i. e., he has exhausted all the possibilities of his chosen method and has endeavored and finally succeeded in making it as perfect as possible. We talk of academic drawing when we think of artists like Bougareau, of Kenyon Cox—in the same sense MacDonald's portraits are academic. He is a believer in long exposures that do not merely give one aspect of a sitter, but a concrete result, a composite of slight changes in the facial expression. The likeness produced, so to speak, by the hypnotic suggestion of the photographer, the final aim of all his later years' portraiture, necessitated a most rigid simplification in the manipulation of his studio paraphernalia. A man bent on such immediate character reading cannot be hampered by focusing, by special lighting and arrangements of backgrounds. He must have everything at his finger ends. So he made all his appliances as compact and practicable as possible. He reduced all labor in the presence of the sitter to the very minimum, and for that purpose studied out a system of lighting that would serve all purposes.

The portrait by H. J. Leonard (Fig. 10), although an excellent piece of workmanship, does not show any such academic note of individuality. It is made in the ordinary

method, and consequently shows greater consideration of the personality of the sitter. It is impossible to take all people photographically in the same manner. It may develop a distinct style of interpretation, but surely at the expense of some of the sitters.

The pose in this portrait (Fig. 10) is simple and unaffected, the facial expression natural and full of character. The importance of the plane of the face, consisting of subtle middle tints, is skillfully emphasized by the white accent of the collar and well balanced by the two hands. The hands in the picture deserve special attention; they are expressive and at the same time accurate. In only too many portraits the treatment of hands is either entirely overlooked or of so slovenly an order that one would prefer not to see them at all. They are, in nine out of ten cases, either badly foreshortened, disproportioned, too dark, or deficient in line and modeling.

Comparatively few photographers seem to realize that the particular appearances of hands are characteristic of the dispositions of the sitters. The whole gamut of human charactertistics—of weakness and strength, of timidity, kindness, anger and their opposites, etc.—could be expressed by the hands. Every good and evil passion, by their continual exercise, stamp their impression on the form and features of man, and each particular passion has its own expression.

There is little fault to be found with the portrait, Fig. 13. The pose is unconventional, though natural, and it seems to be a good likeness. The foreshortening of the right arm is a trifle careless; it looks too small in comparison with the other. The background is well handled. The dark mass on the left gives solidity to the picture, but the spotty manipulation behind the head is objectionable. It is one false note in the composition. There should be, of course, stronger high-lights in the face, but as the modeling of the features is satisfactory, perhaps little could be gained by it. The pictorial style avoids strong accents, and

although the print has very few pictorial characteristics, it after all strives for the softness of effect which "pictorialism" has introduced into portraiture.

Arnold Genthe in the portrait of "Peter Robertson" (Fig. 12) shows us the method of diffusion in a more marked degree. As may be easily understood, there is in this sort of pictorialism not much scope for clear, well defined character interpretations (at least as we generally understand it), yet there is something in it that is perhaps equally eloquent. As I look at his "Peter Robertson," all washy and blurred, and yet distinct enough to reveal the genial disposition of the sitter, I do not merely see the face, but something beyond, something of his temperament, of his individuality as a man, and the fleeting mood of the moment. Is it merely because I am familiar with the work of these men, and does my imagination add this intangible something? Very likely; but is it not rather curious that a photograph can set your imagination going in such a direction? It seems so to me.

Technically, this is easy enough to explain. Of course I do not refer now to the photographic technique, but that higher technique of conception. Every painter who thinks (sorry to say there are many who do not, just as there are such photographers) knows that mystery is produced by vagueness. Form ordinarily is something very tangible, but as soon as its outlines are blurred and its texture diffused, it will begin to mystify us. This is—if not the aim—at least the final result of such work.

The photographing of groups is undoubtedly the most ambitious and most pictorial branch of portraiture. The difficulty lies in bringing the two or three figures together in such a way that their shapes do not conflict with each other, and to surround them with an adequate atmosphere.

There are various ways—the conventional studio effect as represented by "Mrs. C. Vanderbilt and Children," by A. F. Bradley (Fig. 14); the home portraiture method exploited by H. H. Pierce in his "Portrait of Mother and

Child" (Fig. 15); the genre idea as shown in "Doris and Her Mother," by Elizabeth Flint Wade and Rose Clark (Fig. 16); and finally the unconventional way of which we have a specimen in Paul Fournier's "Listening to a Lecture" (Fig. 17).

Fig. 14 is a good specimen of its kind. Society folks are apt to have their own way and ideas about how they would like to look in a portrait. They still prefer elaborate settings. They have traveled abroad and perhaps become infatuated with some portraiture of Romney, Reynolds, Gainsborough—or it may be some modern master like Sargent—and wish to be portrayed in that fashion. The photographer must be prepared for any such emergency and often goes to the trouble, for a single client, of having a special background painted or a special balustrade, staircase or gateway constructed. A. F. Bradley is a master of these pictorial arrangements. He is an artist in feeling and knowledge, and Bradley prints are known for the elegance and good taste they display. The management of tone in most of his prints is superb and quite up to the best accomplishment in that line. They prove that one can please the public and yet remain artistic. But they represent, after all, a curious phase of photography, these portraits of Bradley. Do these elaborate compositions not look a trifle old-fashioned, built up as they are with accessories and backgrounds to veritable *tableaux vivants.*

The portrait of "Mother and Child," by H. H. Pierce, represents a variation of home portraiture that comes more and more into vogue. It has been taken in a home with the light which was available in that particular interior, but it has, notwithstanding, all the character of a studio production. This is accomplished by the painted-in-background. The great shortcoming of this innovation is that the background is frequently in no relation whatever to the light of the rest of the picture. This is, however, not the case in the Pierce portrait. In this particular instance it is merely used to give a more picturesque setting to the figure. It is in no

Examples in Portrait Composition.

Fig. 14. "Mrs. C. Vanderbilt and Children" A. F. Bradley
Fig. 15. "Portrait of Mother and Child" Henry H. Pierce
Fig. 16. "Doris and Her Mother" Elizabeth Flint Wade and Rose Clark
Fig. 17. "Listening to a Lecture" Paul Fournier

way obtrusive and its vague gradations help the figure. The hands of the girl are a trifle dark, but the two figures pull well together, and this is accomplished by the A-shaped inclination of the two heads, and the rectangular line of the arm which forms the connecting link and produces a sort of quadrilateral shape that dominates the entire composition.

More sympathetic than either of these groups is Fig. 16. This portrait is strictly pictorial. It is a finely conceived combination of tone and chiaroscural composition, and the pictorial quality is largely due to the contrast of a few small light planes that are opposed to large masses of dark tonality. The genre idea is produced by the introduction of the emotional element. The artist thought as much of the depiction of sentiment as of likeness and detail. It would be extremely difficult to make a similar composition with the detail of Fig. 15. One or the other quality has to be sacrificed. The mother looks indifferent enough to be a fairly good likeness, but the child is more expressive of affection than its own individuality.

Paul Fournier has chosen a simpler method in his Fig. 17. I have stated elsewhere that "A group is nothing but a combination of two, three or more single portraits." This is what many of the old masters did, and what young Fournier has done. Every one of his figures would furnish a satisfactory portrait in itself; they become a harmonious entity solely by the diagonal arrangement, and the way in which the faces and hands are placed and related to each other.

My discourse is nearing its conclusion. I hope I have succeeded in suggesting a method of analysis by which we can enlarge our knowledge of composition. Every print can teach us something. We must see the beauties as well as the shortcomings, and always remain conscious and sufficiently impartial to appreciate that portrait photography, although a specialty, is capable of infinite variety.

Do not limit your ideas of beauty in a picture to the technicalities of the craft, but also recognize the value and

beauty of the personality. Make the photographic print a real valuable possession—not merely a record, but a keepsake, a memento that contains something of the real person who is portrayed.

And whatever you do, do not represent objects indiscriminately. Do not take paintings as infallible models for your composition, or imitate by all sorts of trickery black and white processes and the technical side of painting. You must possess the gift to find something of interest in every person, and to represent it in as artistic a manner as possible. There is something vital, something lovable, something characteristic, something beautiful in every person—no matter how insignificant and plain—which at times flares up and is worthy of an original pictorial record.

To have the power to comprehend all types of humanity, to grow enthusiastic about them, and to depict them faithfully, subordinating one's flights of fancy to the necessity of the moment, and yet making the most of them, would take a man of keen intelligence and a deep love for humanity. And that is, first of all, necessary to produce a good portrait photographer.

The practical application of these principals is readily apparent in the chapters which follow.

CHAPTER XXX.

Part I.

The New School in Portrait Photography.

By R. W. Phillips.

610. **Introductory.**—In the preceding volumes of this library we have been led through the mazes of practical photography, and have been given thorough instruction in technical lines in all branches of this, the most interesting of the graphic arts. It would seem that all the points, even of the minutest detail, have been thoroughly covered, but many volumes will be written on things yet unthought of, because, with all the discoveries of chemical compounds, with all the accomplishments of the scientific student, and with all the beautiful results obtained by the master workman—as shown you in this and preceding volumes—photography is yet in its infancy.

611. We have come to a point where we recognize that photography is not only the medium for artistic expression, but that it will soon take its place in the world to express art itself. Bound by the mechanical lens, the chemical formulæ, the hard and fast rules for lighting and the limitations of manufactured papers, it has progressed to a point of wonderful technical perfection. But the energetic minds of this generation of men and women are not satisfied with limitations, and, loving their profession as they undoubtedly do, they have broken away from the technical ties that have kept them in check, and are making rapid strides in what, for the want of a better name, we will call, "The New School in Portrait Photography."

612. There are those who are giving their time and

labor towards *pictorial* work alone, but the master portraitist in photography includes both branches in his work, trying never to lose sight of the wonderful opportunities within his grasp for the expression of character and individuality in his subjects. The advanced student of this new school, being pastmaster of photographic technique, realizes that he can now cut loose from the old formula of "Just the right time, just the right development," etc., etc., and he says to the technical demonstrator, "I shall under-time or over-time, under-develop or over-develop as the case may require for the result I am after. Moreover, I shall photograph my sitter in any light that pleases my eye, whether it comes from the top, side, or up from the floor; and I may be found combining any two or all three of these lights. What I am after is to see with the artist's eye and the complete mastery of my medium will produce the desired result."

613. Does the artist give you an absolute copy of the light as it falls on his subject in the studio? No! For generations he has idealized. Why should not the advanced student in photography do the same? He no longer trusts to the developer in the tray to do all the work—he takes his negative in hand and, by skillful manipulation, locally develops to bring the high-lights, middle tones and deep shadows into ideal relation one with the other. All this we will show as we progress.

Illustrations.

614. In Fig. I, we have a fully timed negative, giving all the roundness of the face, all the detail in the shadows, and perfect development of negative, such as a demonstrator would call a fine example of any special make of plate.

615. In Fig. II, we have the same lighting, the same

The Commercial Print
See Paragraph No. 614

The Artistic Print
See Paragraph No. 615

Extreme Low Key of Lighting
See Paragraph No. 616

Results of Direct Illumination
See Paragraph No. 617

Results of Full Exposure on a Flat Lighting—View of Room
See Paragraph No. 618

pose, and the same subject, but the plate has been purposely under-timed. Compare the two, and note that in Fig. I there is practically no strength of character in the pose, that the clothes are as important as the countenance; the background also holds your attention, being just as noticeable as any other part of the print. In other words, the man in Fig I is no more important than his surroundings; while in Fig. II, observe the character of the subject depicted in the face (the most important part of the picture), with the hands, clothes, and background taking their relative and proper subordinate places in the general composition.

616. In Fig. III, we have an attempt at the pictorial in head studies. The subject is in the extreme of low key lighting, with no ray of direct light anywhere in evidence—except upon the head arrangement—and with almost no detail, yet full of interest and idealization of the subject. The original lines of mouth and chin were drawn and hard, but this treatment has softened them and retained the likeness, and yet the negative has had no retouching whatsoever. The light fell through a narrow slit back of the figure at an almost vertical angle, striking the head-dress, and just touching the shoulders.

617. The next example of the unusual in photography is found in Fig. IV. The light on this figure is diametrically opposed to that in Fig. III, being sunlight diffused only by ribbed glass. The model is placed about eighteen feet from the light, which extends upward to about fifteen feet from the floor, and the camera is set at right angles with the direction of light. Note the directness of the illumination. The figure is distinctly outlined on the back of the divan, and the shadows under the chin are sharp, yet soft. Here is an example of where, if a fraction more time or any more development had been given, the whole sentiment of the picture would have been lost. The artist knew the original lighting was photographically hard, but artistically beautiful, so he purposely timed short, and developed only for his high-lights. The whole composition is simple, yet

poetic. Local development was used to keep down the tone of light on the lower part of the figure.

618. We now come to Figs. V and VI. Here is an example of full exposure on a perfectly flat lighting. The whole arrangement is absolutely simple, with no attempt at posing, and had the hair been arranged flat on the head, we might well be reminded of a painting made in the early fifties. Notice that, while the whole picture is so nearly in one tone, yet the interest centers on the face by reason of the fact that the hair is the most prominent spot in the whole composition, and all the lines of dress and figure lead up to the face. In Fig. V, you see the form of light used to produce this effect—about thirty-six square feet of side-light, with the figure about twenty feet distant. All the rest of the light was kept down by opaque and white curtains, and the effect of the directness of light is shown by the shadow on the wall. The small screen has been so placed as to soften the light on the back part of the dress. A long window in an ordinary house will give beautiful effects in this character of lighting.

619. In Figs. VII and VIII, we have the same light aperture with an entirely different result, due, as is seen to the fact that both subject and camera have been moved back from it, and the light now has to travel a distance of twenty-three feet to the figure. A hat has been added, and the arrangement is much more complicated than in the sitting figure. The lines in the skirt all lead up to the head, and, to balance the immensity of hat, we have deep shadows in front of the figure, as well as the shadow on the wall, with the hand placed in just the right position to make the composition hold together. This is an example of photography made to please the eye, and not to conform to photographic technique, for is not the negative heavy in shadow and lacking in detail in many places? A large part of the beauty of the picture is due to the deep blacks.

620. Turn to an interesting bit of simple composition in Fig. IX. What construction could be imagined to bet-

A Study in Balance of Dark Masses
See Paragraph No. 619 and Fig. VII, Page 327

Simple Composition for Child Portrait
See Paragraph No. 620

Concentration of Interest
See Paragraph No. 621 and Fig. X, Page 327

"Iris"
See Paragraph No. 623 and Fig. XII—opposite

General Views of Room
for Making Studies VIII, XIII, XI and XVIII

Fig XV

Result from Developed but Unfinished Negative

Fig XIV R.W. Phillips

General View of Room
See Paragraph No. 624

Finished Print with Background Worked In
See Paragraph No. 624

ter represent a child of seven? No complications of light, no elaborate accessories, no unnatural pose—just a little girl, a plain wall, and plenty of light. This is a portrait of the most lasting and satisfactory kind, and although very simple in its construction, is not easy to make successfully. The eye must see quickly, and the result be obtained quickly.

621. We admire paintings that seem flooded with light. We admire curved lines in expressing womanhood. The man who arranged Figs. X and XI may have had Raphael's St. Cecelia as one of his ideals. This illustration has much of the feeling that is found in that famous painting—the light, the pose, the expression, all hold you. You see a table, a door, two hands and a dress, but your eye is involuntarily riveted on the face.

622. Figure X shows just how little care, in accessories, screens, or reflectors, was taken in making up the composition. The artist has used his photographic medium as brush and color—and compelled you to study the face of the subject; and, at the same time, has given an almost perfect composition.

623. Let us now turn to Figs. XII and XIII. We have a study entitled "Iris." Notice that all the concentration of light is on the flowers, and only strikes the face enough to show it is a face. Such pictures are for pictorial effect alone, as a composition like this gives out no personality. It is interesting because of its construction and light control. You may see in Fig. XII that the light falls almost from the top, and is cut down by the black light-controller, so that most of it falls on the flowers, making them the real center of interest.

624. Figs. XIV, XV and XVI, show us how a regular studio picture is made from the exposure to the finished print. The wide-angled view (Fig. XIV) gives us the manner of lighting. The next, (Fig. XV), the result of developed plate and retouched negative. In Fig. XVI is the finished print with background worked in, for which purpose powdered lampblack is used on ground-glass substitute. These figures show the class of finished work most

popular with the customers of advanced photographers of today.

625. Turn next to one more interesting example of purely decorative art in photography. (Figs. XVII and XVIII.) We have a simple window light screened by a flat side-screen to cut the light off the lower part of the figure. It is suggestive of Japanese art in construction, but is purely American in effect. Try the experiment of covering up the spray of flowers, and you will find that the whole figure loses interest. The key to our composition is this little spray of flowers just touched by the strong light from the window. The light is extremely strong and direct on the back of the head and figure, and the suggestive detail in the face has been preserved by stopping the development just at the point where the shadows had obtained their full strength. Carrying it any further would have quite destroyed all its pictorial effect.

Part II.

Available Reproductions from Old Masters.

626. To a greater or less extent all persons are imitators. In an entirely new line of work it is impossible for the majority to be absolutely original; therefore, for the assistance of those who have no perfect ideas as to what is required for artistic rendering of composition in portraiture, no better examples can be copied than portrait paintings of the Old Masters. It is, of course, impossible to obtain these in the original, but numerous reproductions have been made, and these are accessible to all.

627. The Perry Pictures Company, of Malden, Mass., have issued a very complete series of half-tone reproductions of the paintings of the Old Masters. This company

Example of Purely Decorative Art in Photography
See Paragraph No. 625, and Fig. XVII, Page 327

PORTRAIT STUDY

STUDY No. 27—See Page 580 GEORGE HOLLOWAY

issues a beautiful catalog, containing over one thousand miniature reproductions. The pictures are arranged under schools of painters, as the Italian, French, German, Dutch, English, Flemish, Spanish, American, etc. Many noted sculptors are included in the series; pictures representing historical events in American and foreign history are given a prominent place. Taking everything into consideration, both pictorial portraits and pictorial landscapes are reproduced most truthfully, and will enable any one to secure valuable ideas, which may be carried out in the regular photographic work.

628. The following list of pictures cannot be too highly recommended for both the professional and amateur photographer, and you should avail yourself of the opportunity of at least securing the catalog from the Perry Pictures Company, as the cost will be only six cents—four cents being sent to cover cost of postage. We are not giving this mention of the Perry Pictures for the sake of advertising this company, but solely on the merits of the pictures, and the immense value they will be to any one interested in producing the most artistic effects, both in portraiture—lighting, posing and composition—as well as landscapes. The cost of the pictures is one cent each.

Recommended List of Reproductions from Old Masters.

Published by Perry Pictures Company, Malden, Mass.

Italian Art.—Fra Angelico, 222H; Fra Filippo Lippi, 241; Perugino, 257; Botticelli, 259; Leonardo da Vinci, 277, 278; Michelangelo, 294; Luini, 305; Titian, 308; Raphæl, 320, 323, 336; Correggio, 365; Tintoretto, 376; Guido Reni, 394; Sassoferrato, 410; Carlo Dolci, 413, 414.

French Art.—Greuze, 473; Millet, 508, 508C, 510, 512, 518; Rosa Bonheur, 537, 537C; Bouguereau, 569; Jules Breton, 577; Delobbe, 592.

Flemish Art.—Rubens, 630; Van Dyck, 648.

Spanish Art.—Murillo, 670, 673B, 680, 681C.

Dutch Art.—Franz Hals, 701, 702, 703; Ruysdæl, 705, 706, 707, 709; Rembrandt, 711, 712, 715, 716, 718, 720, 721, 722, 723, 725, 726, 728.

German Art.—Albrecht Dürer, 774, 775, 783, 783B, 783C, 783D; Holbein, 785, 786, 787, 790, 790C, 790G, 790H; Hofmann, 802, 803; Gabriel Max, 824.

British Art.—Sir Joshua Reynolds, 859, 860, 862, 863, 864, 867, 868, 869, 870; Gainsborough, 874, 874C; Rossetti, 929; Millais, 934; Burne-Jones, 945, 946, 947, 948, 949.

American Art.—Whistler, 1010; Sargent, 1031; Miscellaneous, 1353, 1416G, 3140, 88; Boughton, 1335; Carpenter, 1423; James, 3197; Shenck, 3200; Sant, 3248; Sichel, 3310.

The above hundred pictures may be obtained for $1.00.

Gowan and Gray Art Masterpieces.—These reproductions of masterpieces are bound in a series of volumes, each volume containing the reproductions from one particular artist. The series includes the following books, each of which contains the representative masterpieces of the respective artists:

Rubens	Titian
Van Dyke	Franz Hals
Rembrandt	Murillo
Raphael	Wouwerman
Reynolds	Velasquez
Teniers	Holbein
Early Flemish Painters	Veronese

These books are not carried in stock in this country, but are imported by Brentano's, 5th Ave. & 27th St., New York, N. Y. The price of the books is 40 cents each, and orders for them should be sent to the above address.

CHAPTER XXXI.

Brush Development, or Local Treatment of Negative while Developing.

629. In order to centralize the light on the point of interest, the advanced student tries many ways to cut down objectionable high-lights in his picture, all of which are more or less successful. One of the most practical methods of doing this is by locally developing the negative, by which is meant holding back where the accent is not needed, and allowing full development where the interest is centralized. This, of course, applies to that class of work where lights are the point of interest. To do this, three separate developers must be used; one the regular straight formula, another the straight formula with the alkaline solution left out, and then a simple solution of one-half water and one-half alkaline solution. Put two brushes (soft camel hair) in the latter, one about one inch and one about one-eighth inch. These sizes apply particularly to 6½ x 8½, or 8 x 10 negatives.

630. Now, we will say that your exposure is made. The subject is a woman in white drapery, or white dress. Lay the exposed plate in the tray, and pour on the normal developer as though you intended developing regularly. Now, just as soon as the image becomes visible, rinse the negative in water, and place it in the second solution, which is minus alkaline. As it will not continue developing to any extent in this solution, you may now start your local work.

631. First, go over the whole negative (quickly) with

a large brush saturated with the alkaline solution, being careful to cover all parts. Addition of alkali starts development again. To do this, hold the negative in hand, and immediately when you have covered the plate with the large brush, place it back in the tray No. 2 for a few seconds, then take up again. Use a small brush to develop the high-lights, to give accent where you require. This gives you the opportunity of bringing out or holding back any points you wish in any part of the negative, as only those parts of the negative to which you have applied the alkali (carbonate of soda) will develop. The operation of brushing should be repeated until the negative is sufficiently developed, always immersing the plate in bath No. 2 after applying the alkali, as it requires the two combined to carry on the development.

632. It will be found that the system and solutions can be varied to suit effects desired, such as, use one-third alkaline solution to two-thirds water, or two-thirds alkaline to one-third water. Over-timed negatives are very difficult to manipulate locally, and in such case it is suggested that a very weak solution be used, or the negatives will develop too rapidly for proper control. Also, if the water used in making up developers is very hard, the alkaline solution must be stronger, or very slow development will be the result.

633. In making home portraits a window often comes into the composition of the picture, and if developed straight would take a most prominent position, detracting from the interest of the subject. Under such conditions local development gives perfect control, as it is possible to give one-half the development to the window, while developing the rest of the negative to its fullest extent. The following formula for brush development is found to be the most satisfactory:

634. **Formula for Brush Development.**—Take any pyro-soda formula and make up regularly for first development. Then make up another solution, same quantities,

"IN A GARDEN HAT"

STUDY NO. 28—See Page 580 CARLE SEMON

Ordinary Development
See Paragraph No. 635

Local Brush Development with Background Added
See Paragraph No. 635

Fig XXI

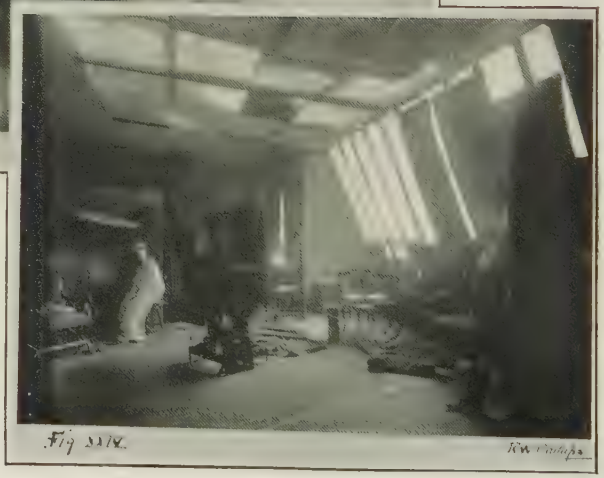
Ordinary Development
See Paragraph
No. 636

Fig XXI

General View of Room
See Paragraph No. 636

Local Brush Development with Background Added
See Paragraph No. 636

Ordinary Development
See Paragraph
No. 637



General View of Room
See Paragraph No. 637

Result of Local Brush Development with Background Added
See Paragraph No. 637

PORTRAIT STUDY

Study No. 29—See Page 581

Charles C. Kough

pyro-sulphite and water, leaving out the carbonate. For the brushing bath take carbonate one-half, water one-half, to make about four ounces of solution. Place this solution in an ordinary glass tumbler, and keep the brushes in this tumbler. This alkaline solution will develop about ten 8 x 10 plates.

Illustrations of Local Brush Development.

635. Figures XIX and XX will illustrate some of the possibilities in local development of negatives. The subject in both these compositions, with white hat and white drapery, was placed in a full, open light. Notice, in Fig. XIX, the drapery, gloves and hat are so much in evidence that the face, which should be the central point of interest, is lost in the high key of its surroundings. Now, study Fig. XX. The whole tone of the drapery is reduced to a proper representation of the original textures of dress and gloves, but the *face* is now the central point, just as the artist would paint it. This example is one of the best tests of local, or brush development, as in lighting such a subject it is almost impossible to have a nice accent of light on the face, and not get the white hat and feather hard and chalky.

636. Another example is shown in Figs. XXI, XXII, and XXIII. Notice that the model has been placed in a strong, direct light—Fig. XXI. The result—Fig. XXII—is uninteresting and flat, such as we would not even retouch for a first proof. Now, notice Fig. XXIII; after brush developing, the negative has been carefully retouched, ground-glass substitute used on the glass side, and an appropriate background worked in to carry out the poetry of our pose. In making this series, the photographer has had his mind on the final result, and knew just how to go about obtaining it.

637. We come next to a head study in a series of

three figures—XXIV, XXV, and XXVI. This is a class of pictures that very seldom needs local development, but the accompanying illustrations show how the combination of brushing and working up the drapery, hair, and background has produced a beautiful effect in the final print, while the original negative, developed straight, is an ordinary head of no particular merit. Pictures like this—Fig. XXVI—remind us of paintings, because the interest is centralized, the subject is poetically idealized, and yet the individuality is retained in the broad massing of lights on the face. It is a beautiful example of the combination of artistic photography, and might be termed, "Sane photography brought to a high plane of artistic perfection." For instruction for working in backgrounds, see Vol. X.

CHAPTER XXXII.

Child Portraiture by the Ordinary Window.

Modern Photography.

By Wm. Shewell Ellis.

638. That we owe a great deal to the "Old School" in photography is readily granted. To these early workers we are indebted for most of the technical perfection that has come to us in the profession today. Considering the difficulties incident to the making of wet plates, slow emulsion, and poor lens work, it is really remarkable that these men were able to produce such successful photographs as they did.

639. Following the same line as the other arts and crafts, when men became thorough masters of their implements, the esthetic side then had time to develop.

640. The portrait photographer can gain no greater inspiration than in the study of modern paintings. How strong this influence has been can be seen from the great advances made in pictorial photography of late years. Some few of the "Old School" have tabooed the artistic in photography, but these in time will be obliged to change or give way to the new work, for experience is proving every day that the public demands it.

641. The successful portrait photographers of today are men who have worked not alone for chemically perfect results, but to make photographs that may truly be called portraits. To photograph a person is comparatively easy, but it is quite another matter to make that photograph not only a good likeness, but to put into it those other qualities—individuality, character, good composition, and technique—all of which combine to constitute a portrait.

642. Perhaps the most difficult branch of photography is that of depicting childhood. The mechanical part of our work is in such evidence that it becomes part of the art to successfully keep it in the background. In other words, the one who is able so to interest the child in its play, that the child is unconscious of its surroundings, alone can be classed as a successful child photographer.

643. To accomplish this the studio should be as much like a *home* as it is possible to make it. A large volume of light is essential to obtain speed in exposure. An ordinary window, fitted in the upper half with prismatic glass, will give quick light, and still retain the home effect. The bottom sash should be curtained with a light and dark shade, working from the lower ledge up. With a light of this character almost any angle can be obtained to photograph a child. The farther from the light the softer is the portrait. In fact, a perfectly flat light will often give a successful effect, especially where the child has large eyes. With our modern lenses and fast plates the results are wholly dependent on the "man behind the gun." It is to this fact, more than to any other, that we may look for the difference between the Old and the New School in Photography.

644. A few years ago the photographer was satisfied to stand behind the camera, and make a noise like a dog or toot a horn. Is it any wonder that in the Old School portraits of children, the child appeared either stiff or had a startled expression? Today the public demands more, and this desire on the part of the public for more intelligent work has attracted to the profession a higher grade of men.

645. The composition of a picture is in itself a study. The filling of a given space so as to make a photograph of a child something more than a likeness, is to make a picture that is interesting to any who may look at it—this is true art. This is exemplified in the old paintings—for instance the Baby Stuart, or in some of the modern paintings by Sargeant or Cecelia Beaux. Are these not beautiful portraits, and also pictures that we would all

Photos by Wm. Shewell Ellis.

Illustration No. 87
Examples of Child Portraiture with Perpendicular Light
See Paragraph No. 647

Photos by A. S. DUDLEY.

Illustration No. 87*a*
Examples of Child Portraiture in the Home

desire to own? If you study these paintings you cannot fail to be inspired by their true spirit of the master. These artists have studied children, and have painted, in the blossom of youth, real flesh and blood. To be sure, most of these painters have had charming subjects, but a most uninteresting child can be placed in an atmosphere that will surround it with beauty.

646. We have seen this exemplified in the photographs of a few years ago, compared with a picture that a modern pictorialist would make. In looking through the old family album, the pictures suggest an entire lack of atmosphere. In real life the child would be doing something, or at its play, not held fast to a chair by an invisible device. It must have its toys, or be in the act of play. The right of every child is joy, and this joy is expressed in its play.

647. The first requisite in the photographer of children must be infinite patience. You must gain the child's confidence, and when it trusts you, the way is easy. No rule can be laid down by which you can gain this confidence, for every child is different. Some children are more easily managed when you are alone with them, but babies and "two year olds" are at their best when in their mothers' arms. The most useful seat for photographing children is a piece of furniture copied after the old style kitchen settle; this can also be converted into a table. As a seat it is wide, and over the back different backgrounds can be introduced. It can readily be moved on casters, and when not in use is a decorative piece of furniture. (See Illustration No. 87.)

648. Arrange your picture first; that is, if you desire the child to build with blocks, sit and build with him. Let him push the house over and start again. This time tell him to build a larger house, or suggest a seat for doliy on top of the blocks. You will soon have the child so interested that he will forget everything but the blocks. This gives you time to focus, and make a few snaps as he plays. A word or two will bring his little face around to hear you,

and a funny looking dog or "what-not," sitting on the lens, will cause a smile, and a front face that is full of interest. The picture book, a game of ball, or blowing bubbles, are a few suggestions that will win the most indifferent child. Use plenty of plates. The cost is small, and few parents can resist the many expressions. Other characteristic child studies are shown in Illustration No. 87*a*.

649. Tank development is a most satisfactory method of developing such plates. A good formula is as follows:

650.—

Stock Solution A.

Water	66 ozs.
Pyro	1200 grs.
Metol	150 grs.

651.—

Stock Solution B.

Water	100 ozs.
Sulphite of Soda	25 ozs.

652.—

Stock Solution C.

Water	100 ozs.
Carbonate of Soda	25 ozs.

To develop, take three ounces of A, B and C. Mix well in 240 ounces of water.

653. Plates should be turned at least once during development. Negatives develop in 40 or 60 minutes, according to density which you require.

654. The great advantage of using tank development is the slow action of the developer on the negative. If you use a light-tight rubber box with a lid, such as is sold by photographic dealers, you are able to develop 24 5 x 7 or 12 8 x 10 plates at a time, and can leave them for a period of forty or fifty minutes while you attend to other matters.

655. As far as possible, all shading of light dresses, etc., should be made under the light. Movable screens for this purpose are now on the market.

CHAPTER XXXIII.

The Studio of the Future.

656. That there is a change, almost imperceptible, but still constant and powerful in its influence, in the methods of portrait-making, is undeniable. The arbitrary domination of the sky-lighted operating-room, with its endless source of troubles, its unwholesome effect on the characteristics of the sitter and its severity of poses and lightings, is being gradually broken. The signs all point to a different and more up-to-date method of making portraits, a method more in harmony with the greater knowledge people now have of the rules of art and good taste.

657. The operating-room with its side or side and top-light is the outgrowth of the needs of the first photographers who used the slow Daguerreotype process and later the somewhat faster, but still slow, Callotype and Collodion processes. The exposure with the Daguerreotype process was so prolonged that an out-door exposure was almost a necessity. This gave way to the glass-house, generally situated on a roof if the gallery was located in a city. Later, as one process succeeded another, each faster than the previous one, a smaller source of light was found adequate; but still the traditions of stucco-benches and pillars, impossible background scenes, and heavy ornamental chairs maintained, and each succeeding generation of young photographers was taught that portrait-making by photography meant a skylight which would give a certain stereotyped

kind of lighting, under which people "sat" for their pictures.

658. "Sitting for a photograph," under these conditions, was, to many, a mental torture. The old-time "look-pleasant, please," and "don't move" phrases acted as cold showers on the temperament of the sitter, and while a physical likeness was never hard to get on the plate, the photograph seldom showed the character or individuality of the sitter. It lacked the ease of pose, and few, if any, of the canons of arts were observed, except by those photographers who were possessed of exceptional ability or had the training and insight of an artist.

659. It was the dilettante in photography, the high-class amateur, who first realized that skylight portraiture was not satisfying, to whom the credit must be given of showing professional photographers that there were other ways of making portraits than under the skylight with its ever present 45 degrees light. His initial crude attempts at portrait-making in the home were first laughed at, but he persevered, and the works of some of the leaders soon proved that the home portrait, or the portrait made by natural lighting, was often more artistic and more natural in expression than that made under the skylight. A realization of this, and the further fact that home portraiture called for no studio and few accessories, led some of the professional men to take it up as a specialty, adding to the ideas of the amateur the skill and finish acquired in daily professional work.

660. Though the spread of the idea was slow, it was steady, and today home portraiture and a home portrait outfit is almost a necessary adjunct of every studio. There are still many photographers, however, who fight hard against the growth of home portraiture. They are loth to lose their investments of thousands of dollars and the work of years in their studios, and to admit that, after all, the profession of portrait-making needs but a certain skill in adaptation, a simple camera and some kind of a work-room in which to finish the work.

661. But the change is there; it is as unavoidable as that the earth will revolve today, tomorrow and every day. The point to be looked at, is how to adapt one's surroundings to get in tune with the present trend; how to make of the present studio, the "studio of the future" so that investments may be saved and turned into even better account by catering to the demand for the home style of portrait or the portrait made in home-surroundings. It is not every home that is suitable for home portraiture. The better class photographer, with his more select patronage, has little difficulty in finding suitable surroundings and lightings for his artistic portraiture. His less comfortably situated competitor has to wrestle with harder problems, after he finds the home entirely unsuited to the making of portraits. His clients live in small rooms, or, if in a city, in flats, in which the rooms are barely large enough for the few necessary pieces of furniture, and certainly not adapted for good portrait-making. This throws the average studio proprietor on his own resources, and we are again led to the point how to get around the difficulty of adapting oneself to circumstances and so supply one's patronage with the growing demand for the new styles.

662. Following the old law of necessity being the mother of invention, the up-to-date artist, failing to find each home suitable for portrait-making, has brought the "home" into his studio, and, where circumstances permit, now fits up a room with all the comfortable appearances of a living-room in daily use, using this "home" studio either entirely or as an adjunct to his regular skylight-room. The old-time portrait room, better known as the operating room, will soon be a thing of the past, its place being taken by the more exclusive studio. The large skylight, often equipped with dirty curtains and screens, and the room supplied with reflectors, head screens and backgrounds galore, to say nothing of the numerous accessories which give the impression of a work-shop, rather than a studio, will sooner or later be dispensed with. Today the vast improvements in

electric and other artificial illuminants enable the photographer to produce any result obtainable with daylight. Again, the modern methods, not dependent on light conditions, make it possible to select a better business location for a studio, with the further advantage that less room will be required.

663. *The studio of the future* will be fitted up as a living-room; furnishings and all being exactly the same as a library or living-room in the home. All semblance of a photographic studio will be absent, except the ordinary camera and the lamp which supplies the illumination. In this way it will conform to the demands for portraiture in the home.

664. The accompanying illustrations represent the first steps toward *the studio of the future.* The room arranged for this purpose was formerly used for displaying large portraits, but is now fitted up for a studio, however, with all the appearances of an art room, wherein choice productions of the artist are displayed. In rearranging and decorating this room the artist had several ideas in mind—*first,* that of using the walls for a background, so the subject could be photographed while seated, or standing anywhere in the room; *second,* provision had to be made for photographing both children and adults in the same room; and *third,* it was essential that the position of pictures on the wall could be instantly altered to properly balance the portrait and carry out the idea of portraiture in the home. This is a most important consideration, as it supplies a means of breaking up blank spaces in the background and carrying out the lines of composition. To accomplish this it was necessary that the walls be covered with such a material as would permit pictures being adjusted to any space without showing the ungainly picture wire from which frames are usually suspended. This was easily made possible by completely covering the walls with closely woven wire mesh, suspended over one inch pine strips. The top strip was run lengthwise of the room, 18 inches from the

ceiling, while the lower one was placed within 32 inches of the floor, and the third midway between the two. The wire mesh was stretched and fastened tightly over these strips with small staples.

665. Burlap was used for the covering, it being the most serviceable both with regard to durability and appropriateness as a background. The ceiling being 12 ft. high, the burlap was obtained 8 ft. wide, and stretched around the room in one solid piece. Spaces, of course, were cut out for the doors and the windows. The burlap was first tacked at the top, close to the edge, and then lightly stretched and tacked at the bottom; the picture moulding along the top covering the tack heads, and the 3 inch plate-rail at the bottom covering the base. Space between the plate-rail and the floor was covered with leatherette, in imitation of board panels. The color of this material matched the mission finish of the trimmings and wood-work.

666. The principal object of the wire mesh on the walls is to enable the hanging of pictures anywhere without wire suspensions. A wire brad is driven in the center of the upper end of the back of the picture frame (if the frame is very heavy two brads are used, one being placed on each side of the frame). The brad is driven in at a slight angle, and when the frame is placed against the wall, the brad penetrates through the burlap into the wire mesh, which latter supplies a firm support for the frame. Any picture may be instantly removed and hung in any place desired. The fact that the framed picture, and even an unframed one, may be quickly changed about makes it very easy for the operator to instantly break up his picture space.

667. **The Use of the Plate-Rail.**—The plate-rail is located at a suitable height for sitting, two-third and full length standing subjects, breaking up the background and dividing up the space nicely between the top and bottom of the picture. For children's portraits it will be found the most valuable accessory in the room. A child will stand naturally by the rail, as it is of suitable height to rest the

little arms, and it also serves as a convenient accessory upon which to place a simple toy or a picture. Even as a place on which to rest the hand it will frequently be found useful. So, on the whole, the room is built for many uses. Chairs of different sizes and styles are provided to suit all subjects. One corner is fitted up as a Turkish lounge, where small groups may be conveniently arranged. The drapery suspended from the picture moulding at the far end of the room permits of a large variety of very pretty background effects for full length and two-third figures. By catching and curving the drapery to one side or the other very clever head studies can be made, the curve in the drapery, with its broken lines, giving a suitable background.

667*a*. The accompanying illustration will give an idea of what can be accomplished under these conditions, and how each photographer can produce results bearing his own individuality, which makes his work exclusive and removes it from the commercial class.

668. **Light Employed.**—The Pony Arc Lamps, manufactured by the New York Engravers' Supply Company, was the light employed in making these illustrations. With a pair of these lamps, fully timed exposures can be made in less than two seconds. The Aristo lamp may also be used in the same way, a single one being sufficient for the purpose. The Pony lamp is not as strong as the Aristo lamp, yet by using a pair of them about equal illumination is obtained and a very steady light is given, as there is no flicker whatsoever, and the cost of maintenance is very little, one carbon with constant use lasting more than a week. Both of the lamps mentioned supply violet rays of light, which is far more actinic than is apparent. With the lamps arranged according to description and as illustrated, the light does not affect the eyes any more than an ordinary incandescent bulb.

669. **Light Cabinet.**—The Light Cabinet is built on an upright standard of 1½ inch iron pipe, 10 ft. high, with two curved arms, from which are suspended the two lamps.

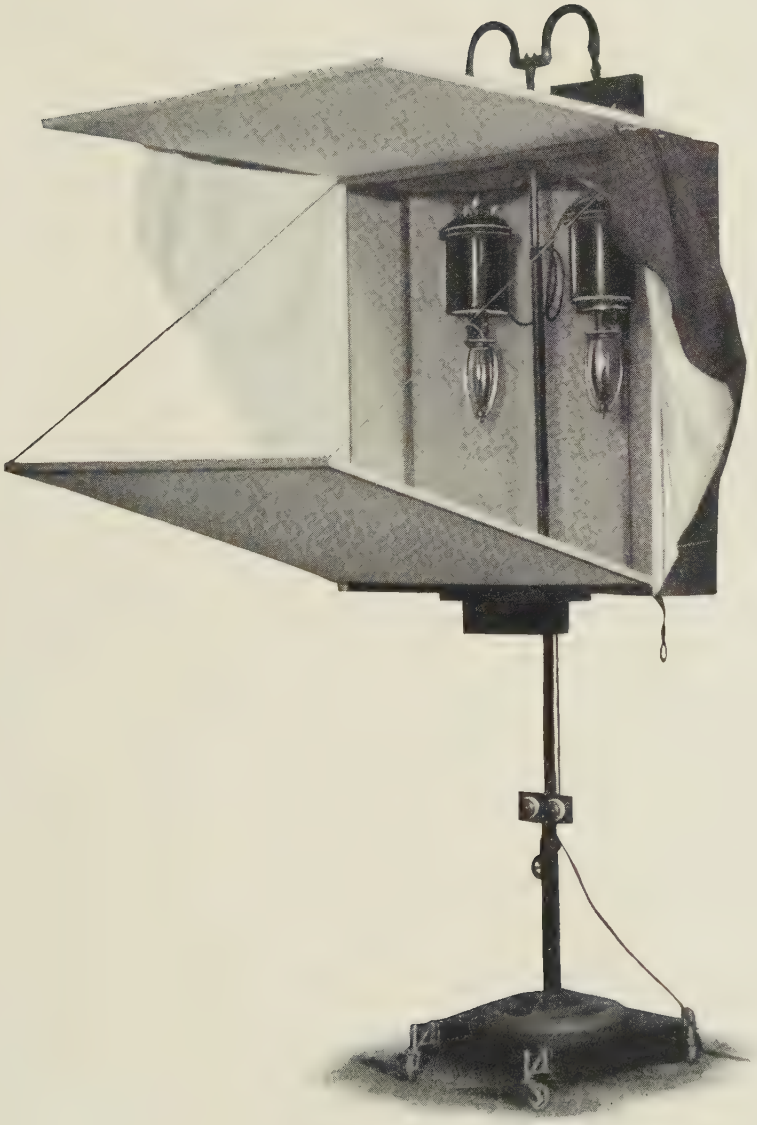


Illustration No. 88.
The Light Cabinet.
See Paragraph No. 669.

Each lamp is attached to a coiled spring-belt block. By means of the coiled springs the lamps may be raised and lowered at will. When the single Aristo lamp is used but one arm to the standard is necessary. The upright standard is made to fit in a hollow cast iron base 2½ ft. high, having a heavy flange at the bottom, which latter is bolted to a heavy wooden platform 20 x 24 x 4 inches. The platform is fitted with four heavy castors, to permit of its being moved about the room, so proper illumination can be supplied the subject no matter where he or she may be seated. One end of the electric wire cable is attached to the lamp, and the other to a plug, which may be inserted or removed at will in the socket at the side of the room. The wire is 25 ft. long, which allows the photographer unrestricted leeway in moving the cabinet about the room. A switch being supplied for each lamp makes it possible to use either one or both at the same time. Direct current should be used, and power current 220 volts will give the best results. (See Illustration No. 88.)

670. **Construction of Cabinet Frame.**—It is preferable to have the framework of the cabinet constructed of as light material as is consistent with rigidity. White pine strips, one inch square, will answer admirably, and for the whole frame 84 feet will be required. If the strips are procured in twelve foot lengths there will be no waste, as such will cut to advantage. (See Illustration No. 89.)

670*a*. First, cut fifteen lengths four feet each, four lengths one foot each, and four lengths three feet each. Now, using the four-foot pieces, make the three square frames, *a, b* and *c*. The corners should be mitered, glued and nailed so the frame will be strong. At the corners of frame *c* glue and nail the one-foot pieces, and at the end of these firmly fasten the two four foot lengths, *d-e* and *f-g*. Next, take two of the three foot strips; place the end of one at *e*, that of the other at *g*, thus forming the angle at *i*. The distance from *e*, also *g*, to *i* is two feet three inches. Miter the ends of the two strips so they will fit together perfectly; then glue and nail

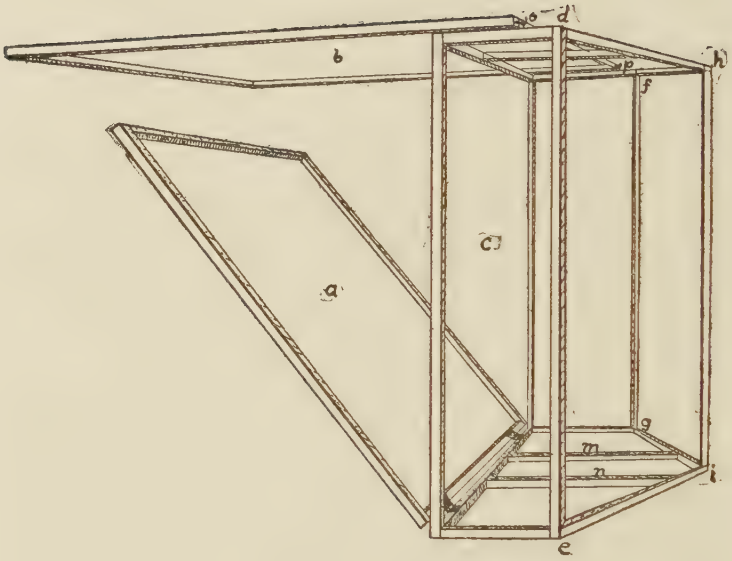


Illustration No. 89.
Frame of Cabinet.
See Paragraph No. 670.

into position. This done, complete the top, *d-h-f,* working in the same way. Fasten into position the last four foot strip between points *h* and *i.* The braces *m* and *n* are placed four inches from the center of the front of the frame, both in the bottom and top panel. With a pair of two inch butts hinge the frame *a* to *c,* having previously covered *a* with lonsdale cambric or tracing cloth. The cloth should be large enough so it can be drawn completely around the front of the frame and tacked on what will be the inside. The tracing cloth is not to be preferred to the lonsdale cambric, as the latter, after having been coated with an easily spreading solution of gum dammar and turpentine, will give a more diffused, and at the same time brilliant, illumination. Cover frame *b* with a good quality of bleached muslin, which acts as a reflector to throw downward light that would otherwise be wasted. This frame is held in the position shown by means of screw hooks in the ends of the frame, at *o* and *p,* caught in screw-eyes which are inserted in the center of the top cross pieces.

670*b.* **Covering Cabinet.**—Cover the sides and back of the body frame, or what we can now term the cabinet, with white oilcloth, having the oiled side face inward to act as a reflector. The cloth should be fifty-two inches wide and seven feet long. With this done cover the outside with brown denim, using small black tacks and inserting them on the bottom and on the top edges of the body frame; the two ends of the cloth being extended toward the front, and cut to fill in the angle formed by the diffusing screen *a* and the front of the cabinet. These side extensions of denim should be neatly lined with bleached muslin, and to the top edge rings sewed every four inches, through which is threaded a wire, fastening its ends to screw-eyes inserted in the top frame *b.* By this arrangement it is possible to open or close the side curtains at will. Now line the bottom and the top of the cabinet with bleached muslin, and on the outside tack brown denim. In this way all light is reflected toward the opening upon the diffusing screen which latter, by means of cords can be adjusted to any desired angle. To place the frame in position the upright rod of the standard

is removed from the base and inserted through the center of the top and bottom of the body frame. The wooden shelf, which can be seen underneath the cabinet in Illustration No. 89, is securely fastened to the upright rod by means of two metal pipe straps. Thumb-screws should be used on one side of each strap, so the shelf and cabinet can be readily adjusted to any height.

670*c*. Through the braces *m* and *n* in the bottom of the cabinet insert long wood screws and securely fasten the cabinet to the shelf. The top of the cabinet should be braced to the upright rod with strong wire. Now replace the upright rod in the base of the standard and set up in proper position.

671.—**Plan of Ceiling Illumination and Electric Cabinet.** While it is not absolutely necessary that the general illumination of the room be specially arranged, yet if one is to fit up a room specially for the work they might as well locate all chandeliers, etc., in a position where the light from them will assist in illuminating the subject. Ordinarily, two chandeliers—one at each end of the center of the room—will suffice. Where the subject is arranged at either end of the room the chandeliers overhead assist in illuminating the hair, thus supplying detail to the hair, which cannot be accomplished with the large lamp, the light from which, being much stronger, reflects the light from the side and front only, while the chandelier, although less actinic in quality does assist in the general illumination.

671*a*. In addition to the chandeliers—one at each end of the room—there may be a two-light chandelier located between these two chandeliers, but a trifle to one side of the center. The light from this chandelier is used to illuminate the shadows, and the electric bulbs employed should be much larger than those used in the two end lights. The bulbs employed in making the illustrations were as follows: In the two end chandeliers we used four 32-candle power Tungsten bulbs; in the lamps to the side were used two 80-candle power Tungsten bulbs. Each chandelier was fitted with a separate switch, located at a cen-

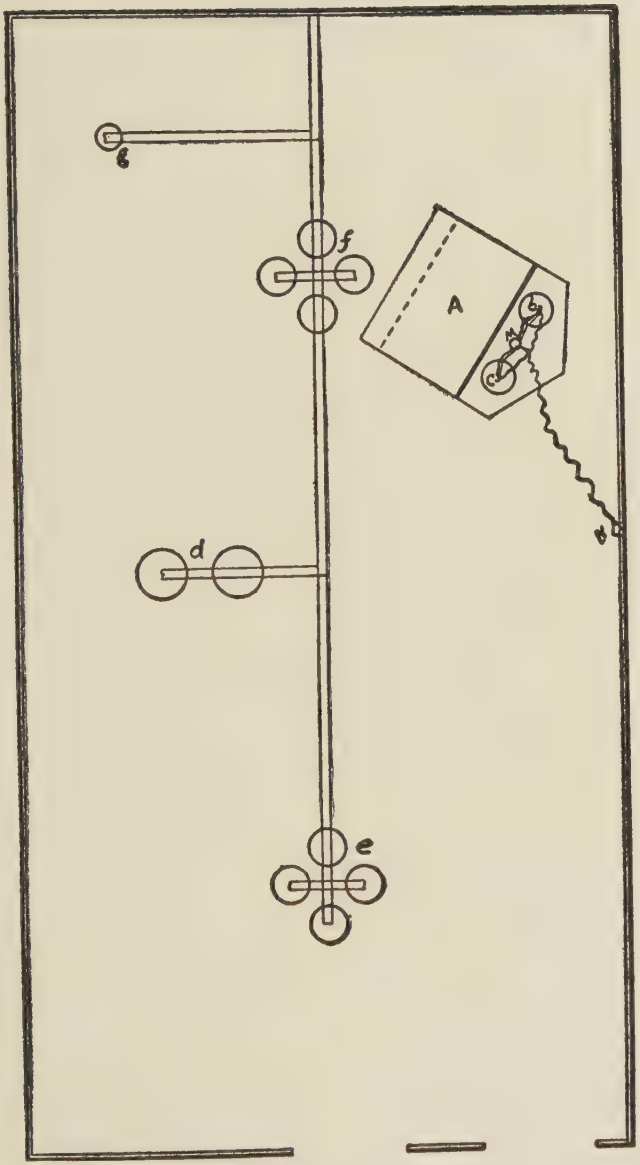


Illustration No. 90.
The Studio of the Future—Plan of Electric Wiring.
See Paragraph No. 671*b*.

A—Light Cabinet. b, c—Arc Lamps. d—Side Chandelier. e, f—Center Chandeliers. g—Drop Light. m—Upright Rod of Standard. n—Plug and Switches.

tral point within easy access. The large Tungsten lamps at the side are fitted with a drop switch from the side wall, the cable of which is of sufficient length to reach to the camera, thus enabling the operator to flash these lights on or off at will. In this way he has absolute control over the illuminant used, and can produce any effect desired.

671*b*. In addition to all the lights named above, we have provided a single bulb drop light in the one corner of the room, which contains a 32-candle power Tungsten bulb. The cable on this drop lamp is of sufficient length to permit of raising and lowering to any height, and becomes very useful when photographing children, for by means of this extra drop light, which falls to one side of the subject, the shadows are fully illuminated. In Illustration No. 90 the sketch of the ceiling plan illustrated herein will supply a fair idea of the arrangement of lights in this studio.

672. **The Lamp in Use.**—In Illustration No. 90*a* is shown the lamp in use, with the subject in position. We also show in this illustration the finished picture made by the light. The lamp is located five feet from the side, and slightly in front of the subject, the top of the cabinet being eight feet from the floor.

672*a*. The diffusing screen is hinged at the base of the cabinet, permitting of the tilting of this screen to any angle desired. *The more perpendicular you have the screen the more contrast you will produce*, and vice versa. An angle of about 45° gives the best results.

672*b*. The cabinet is made adjustable, being clamped to the post. By means of thumb screws it may very easily be raised or lowered at will. For children's portraits you would naturally drop the cabinet a trifle, yet this is not necessary, for by dropping the angle of the diffusing screen you naturally lower the light. At the same time you flatten it somewhat, which latter is not at all objectionable for children's pictures.

672*c*. The only accessory necessary for making pictures under these conditions is a light controller for cutting off all

Illustration No. 90*a*.
Lighting the Subject.
(In the Studio of the Future)
See Paragraph No. 672.

Illustration No. 90*b*.
(In the Studio of the Future)
See Paragraph No. 672*e*.

strong light, as shown in the illustration. The absence of the usual accessories—screens, backgrounds, etc.—gives the studio an air of refinement and more the appearance of a living-room, which causes the subject to feel more at ease, and also has considerable influence in obtaining natural expression; and above all, it enables one to produce results individually their own style.

672*d*. The principal consideration that requires the careful attention of the operator is the locating of the source of illumination in the proper place to produce the desired effect. With this accomplished the rest is simple. As the strength of electric light remains very constant, all you need to consider is the size and speed of the plate you are using, and the speed of the lens employed. A few trials will demonstrate the exposure required to a nicety.

672*e*. The three views of the room taken from different points, as shown in Illustration No. 90*b* gives one a fair idea of the furnishings, etc., of the studio. As you will observe, any portion of this room is suitable for making a picture. The subject, when ushered into the room, after glancing about for a few minutes will naturally assume, of their own accord, some characteristic attitude which will appear graceful. It may be a standing position by the heavy portieres, or sitting in a cozy, comfortable chair, or lounging on a tete, or in the den; it may be standing by the library table, looking over some specimen pictures, or, perhaps, in the act of conversation. If a child subject, they will naturally wend their way to a cozy corner, or some place where there happens to be a small chair or stool; or if one prefers a standing position of them, by placing some small toys on the rail along the wall, they will unconsciously become interested in the toys, thus giving the artist an opportunity to obtain characteristic and pleasing pictures.

673. The lamp and cabinet, being movable, can be wheeled to any portion of the room desired; so it makes no difference where your subjects are located, you can place the lamp to give you any effect you want. The greatest secret

of the success of pictures made under these conditions lies in the ability of the artist. He must usher his subject to a place in the room where he feels they will appear natural and at ease. With this done, he must determine instantly what effect he is after. The unlimited facilities for breaking up his background gives him every opportunity for composing his pictures as he wishes. He can use blank space for his background, or admit a portion of the drapery, or, better still, add a picture or two in just the right place to balance his space and complete his composition.

674. With a little study and care pictures can be made under these conditions which would be impossible to produce under the skylight, for while any lighting effects may be obtained, one has the additional advantage of making pictures amid home surroundings, which are so much different from the commercial picture that they are readily appreciated.

675. Illustrations Nos. 90*c*, 90*d* and 90*e* were made in different parts of this room. An 8x10 rapid plate was used, and the exposure given ranged from one second for the child picture to three seconds for the adult. The lamp being portable was moved about to suit the requirements.

Illustration No. 90*c*.

Illustration No. 90*d*.

Portraiture.
(In the Studio of the Future)
See Paragraph No. 675.

Illustration No. 90c.
Child Portraiture.
(In the Studio of the Future)
See Paragraph No. 675.

STUDIO SYSTEM.

CHAPTER XXXIV.

Method of Conducting a Photographic Studio.

Introduction.

676. The sucessful conducting of a photographic business depends largely upon the quality of the work produced. The photographer's work that is sold to the customers is his own best advertisement, and if the customers are pleased they will unhesitatingly express their satisfaction to their friends, who, in turn, must at some time or other have their pictures taken, and it is natural that they should go to the photographer who has succeeded in giving satisfaction to their friends.

677. An unlimited amount of money may be spent in advertising and general publicity, but if you cannnot "produce the goods" all such money is practically wasted. If you are able to produce excellent work you will not need to worry about business, for with good work and careful treatment of your customers, business will gradually, but surely, come to you.

678. A good principle to follow is to always make the best picture possible of your customer, regardless of how much you are getting for the work or what the work costs you to produce it; in other words, *please your customer first.* With this acomplished you gain his or her confidence, and there will be little, if any, questioning of prices, and

the well-satisfied customer will give you substantial and valuable advertising which money cannot buy.

679. We do not mean to infer by this, however, that advertising is not necessary, for legitimate advertising is as essential to the business of the photographer as it is necessary for the merchant to advertise his wares, only that the photographer has more advantages than the merchant. There are many inexpensive ways in which he may advertise, and produce good results. Suggestions for the advertising of the studio will be taken up under the proper heading.

680. The first consideration for the proper conducting of the photographic studio must be to make good work. Have it nicely and neatly finished, and above all *get the work out on time.*

681. It is our aim in the following paragraphs to offer such suggestions for the benefit of those who are engaged in a general photographic business, or others who expect to enter the profession, that they may manage their business on the most economical basis and meet with the best financial success.

682. Many times a photographer who has been established in business for a long time may be perfectly sincere in his belief that he is securing all of the trade possible to obtain, and, therefore, he makes no special effort to increase his business. To increase one's income it is necessary to improve the quality of one's work, for when producing better results you are far more justified in commanding a higher price for your work. No matter in what profession or kind of business one is engaged, to be successful it is necessary to adopt some method or system for conducting the business, for *system is the real key to success.* We do not mean by this, a lot of red tape, keeping records, etc., for the most successful and most valuable system is that which requires the smallest amount of work, yet permits one at all times to be in touch with every department.

683. It is a generally conceded fact, and one which is literally true, that the photographer endowed with a

"LOUISE"

Study No. 30—See Page 581 Geo. E. Tingley

PORTRAIT STUDY

Study No. 31—See Page 581 C. C. Pike

strong artistic temperament lacks business qualifications. In fair weather he is prone to wait for his customers, and in rainy weather he broods and worries over conditions in general, wondering how he will meet his stock and rent bills, and if he is of a weak nature he will not exert any effort whatsoever to improve the situation, but will allow the conditions to be his master, and eventually cause his downfall. He may become careless as to his appearance; the reception-room and work-room next suffer; then the work is carelessly done, and the customers are slighted, promises being made which he rarely fulfills. It does not take long after this disease has once started before the studio is closed.

684. On the other hand, the successful photographer—the one who is getting the dollars—is taking advantage of every false step that his competitor makes, and during the rainy days and dull season he perfects his plans for getting more business, more customers, the customers of his careless competitor. He cleans up his studio, in general, re-hanging the pictures, and improves or perfects his system of business. He changes the pictures in his show-case often, and prepares special samples, which he may use during the busy season when all of his time must be given to his customers.

685. On entering the successful photographer's studio one is surprised at the hustle and extremely busy air that prevails, when business in general along other lines seems dull. In this studio every employee is kept busy. There are negatives to file, and duplicate or regular orders to be looked up, printing frames and other apparatus to be put into good working order. Everything is overhauled and thoroughly cleaned, from the show-case at the door, through all the work-rooms, reception-room and display-room, even to the stock-room. A photographer, successful both artistically and financially, once said: "When business is dull and any one asks me how business is, I answer him, 'good'; while, on the other hand, when I am rushed with work and the same question is put to me, I answer, 'poor'."

686. In making the sittings exercise care that each negative is the very best that you can possibly produce. Never allow the use of an additional plate or two to stand in the way of your success, but be absolutely certain that you have secured a sufficient number of *good* negatives. The variety of poses and the apparent amount of pains taken with the customers will not only please them, but offer you an opportunity for an increase in their original order, for they will, naturally, select proofs from different negatives, and should they order only a limited number of prints from each pose it means more money to you, as an extra charge should be made for each additional position, of from 50 cents to $1.00 for cabinet size, and larger sizes in proportion. If the total number of prints is not increased over the original order—only a few prints from each negative having been finished—you will surely receive early calls for duplicate orders from some of the styles that they soon find they will want more of, all of which provides for a constant duplicating of orders, which means a gradual increase in the business.

687. You should work conscientiously at each and every step of the work, for your customers are keen to recognize the fact that you are exerting efforts to please them, and recognizing this they will be far more inclined to give their patronage to you, rather than to those who are known to be careless and indifferent as to the quality of their work. Bear in mind the one principle, that a well finished picture is a credit to its maker and a standing advertisement for more patronage, while, on the other hand, one poor picture can do more damage than hundreds of good pictures can do good. Therefore, no lack of pains should be exercised in the finishing of your work.

688. A soiled, carelessly produced piece of work is entirely unworthy of the efforts of the producer, yet many times we see prints poorly trimmed, mounted unevenly, and with paste stains on the mount, etc. A print of this character is also a standing advertisement, but it is one

that keeps away trade from your door and gives it to your competitor.

689. By all means have your pictures appear just as neat as possible. Do not be careless even with the final wrapping. A neat, heavy envelope or cardboard box, in which to place the picture, is well worth its additional cost over common wrapping paper.

690. The busy photographer realizes the absolute necessity of having the confidence of the people; therefore, you should exert every effort to gain and maintain this confidence, for it means success. Under no circumstances promise the delivery of work before you are conscientiously certain that it will be done. Finish your pictures promptly, according to your agreement, and exactly according to the style selected; never offer substitutes without the consent of the customer. It is absolutely impossible to retain the confidence of your patrons by disappointing them, as excuses count for little or nothing. In addition to this, it is very humiliating to the photographer if it becomes necessary for him to make all kinds of excuses for not finishing his work when promised, and if practiced to any great extent you will soon lose your reputation for reliability and promptness, and your competitor will have gained a customer through your negligence. Therefore, *be prompt* if you would succeed.

691. Another important point to consider, especially when opening a studio in a new location, is to impress your customers favorably with the fact that your products are fully worth the price you are asking for them, and that it is quality for which you are striving. Arrange your prices so that you may meet all your expenses and keep your honesty, good name and credit above reproach, leaving a goodly amount for a bank account. Less than this means failure, and in the end, with credit gone, you will be classed with the unsuccessful.

692. If proper consideration be given to the foregoing suggestions, and your work is performed conscientiously, there will be absolutely no excuse for failure.

CHAPTER XXXV.

Part I.

Cost of Producing Photographs.

693. Study the cost of materials and see if your photographs can be produced for the prices that you are asking. Remember, that you are to be honest with yourself and those who are dependent upon you, as well as with your customers. There are photographers who figure only the cost of plates, paper, cards and chemicals, and charge accordingly, thinking that all receipts above these expenditures are profit, and that their profits are large. If they will add the interest on money invested (which is a perfectly legitimate item), the rent of the studio, the cost of fuel, taxes, light, insurance, help (if any is employed), repairs to instruments, furniture, etc., and occasionally the addition of a new article of furniture or a new and improved instrument, in fact all of the necessary expenses connected with the conducting of the business, and not forgetting a reasonable salary for themselves, whose time, labor, skill and energy ought to be worth as much as those of men engaged in other professions, they might discover that business was being done at a loss, and unless prices were raised to meet the discrepancy they would have to close up and retire in a short time. We cannot lay too much stress upon this fact, and it is absolutely unreasonable to expect one's business to be successful if the financial side does not receive continual, careful and thoughtful consideration.

694. **Taking Stock.**—One should always be well informed regarding the most minute details of his business. The first step is to take stock: Provide yourself with

an ordinary day book, and on one page note all of your liabilities; *i. e.*, everything you owe. On the opposite page note your assets. These latter include the value of your studio (if it is your own property), your apparatus, the stock of materials, plates, paper, mounts, chemicals, etc., the amounts owing to you by customers, and the amount of cash in the bank and in your cash drawer. The excess of assets over liabilities is your capital, and the complete statement constitutes your balance sheet.

695. If, at the end of a year, another balance sheet be prepared it may possibly be found that your capital is less, the amounts due to creditors may be more, while the amounts due from sitters are less, and the cash balances are also reduced in size from what they were the preceding year. This will indicate one of two things: Either the business is not paying so well, or else you have been drawing more money from the business than the profits warrant. It is for this reason that stock-taking is important. It enables the photographer to know exactly how he stands, and gives a timely warning that he must devise some means whereby he may increase his income in some way or other. See Chapter XLI, Regulation of Prices.

Part II.

Reception Room Work.

696. In waiting on customers your first efforts should be directed towards the studying of your patrons and obtaining some idea of their tastes and their ideas, and then placing suitable pictures before them in the proper manner.

697. Many times customers will come into the studio quite undecided as to just what they want, and yet they are willing to spend some little money in order to secure a neat and somewhat flattering portrait of themselves. Where the photographer does not meet the customers him-

PORTRAIT STUDY

STUDY No. 32

I. BENJAMIN

"THE ARTIST"

STUDY No. 33—See Page 582 SWEET BROS.

self and must rely on others to handle the reception-room, the greatest of care should be exercised in the selection of a saleslady for this department, as it is of vital importance that she be clever in handling trade. If mistakes are made in the lighting or posing of a subject under the skylight, or in the development of the plate, it is possible to make a re-sitting, but if a mistake is made in the handling of your patrons in the reception-room and they are allowed to leave the studio dissatisfied, there is no remedy. Each and every customer must be entirely satisfied and you should willingly make re-sittings until you have satisfied them.

698. There are, of course, extreme cases where people expect too much. Some will hope to appear beautiful in the photograph, regardless of retaining their likeness. They may expect you to accomplish entirely unreasonable things, and even then not be satisfied with their pictures because you have failed to comply with their ideas in this respect. A clever reception-room lady frequently can convince them of the good qualities of the proofs presented and explain how different objections can be overcome, in many instances avoiding re-sittings and at the same time having the customers leave the studio well pleased.

699. **Sample Pictures.**—A great deal of care must be exercised in preparing your sample work, for herein lies the secret of better prices. A good policy to employ is to divide your samples into three principal classes of customers. The very finest work should be made from negatives of your exclusive trade and these samples should all be finished in your very finest grade of work, regardless of what their original order called for; your next grade should be a medium-priced picture of the subjects representative of the middle classes, and the third grade should be made from subjects of working people.

700. These three principal classes again can be subdivided, if you so desire, into different styles. For example, pictures of men may be arranged by themselves in portfolios or otherwise; pictures of children by themselves, and

pictures of women, also group pictures, by themselves. The advantage of classifying your customers is two-fold. First, by exhibiting pictures of your exclusive customers, all finished in the very finest manner you know, and placing these pictures in portfolios by themselves, you please the customer. Second, when this class of customers enters your studio you exhibit your best work and they naturally will recognize their friends amongst this collection. Should the price for this grade of work be more than they care to pay, you can next show them your exhibit of middle-class customers, and as they will not likely find many of their friends' pictures exhibited amongst them, they will either decide to have the better grade or some style between the two, which may yet be exclusive.

701. For the middle-class customers show your samples prepared for that class of trade, and for the working people show them pictures of the middle-class style first, and if your price for this grade of work is more than they will pay, you may follow with samples of lower grade; but in every instance show your customer a higher grade than in your judgment they would likely want and you may succeed in selling them the high grade, and if not successful in this method, you will have the cheaper grade to fall back to.

702. By following this method you will always be able to sell better work at better prices. Some photographers in selecting negatives for samples are careful to select their best looking and most gracefully posed subjects for their best grade, and the more ordinary subjects for their cheaper grades of work. The customer naturally will admire the more beautiful and will want their pictures made similar to them, etc.

703. The very best trade, as a rule, does not care to look at samples, but relies entirely upon the judgment of the photographer. With such it is a matter of confidence in you, which you must strive to retain, and a liberal number of negatives should be made of sizes depending entirely upon the judgment of the customer. With all

customers who place themselves in your hands you should make a few large negatives besides the regulation size, then submit them proofs of all. When the proofs are returned it is up to you to get as large an order as possible, and any method you may employ which will assist them in deciding the grade and style of finish to select, will be appreciated.

704. A very good plan would be to select from among your samples of best work some pleasing pictures which you know they will admire, first showing them the sample pictures and then laying your proof over this picture, displaying it on the mount so as to give them an idea of how their picture will look finished in a similar style. While, naturally, it would be your desire to sell the highest price grade picture you make, it is not always policy to urge it upon them. Proceed carefully, and if you find they do not want to expend quite so much money, select something which you consider equally as good, but not quite so elaborately put up, and recommend it in a way that they will observe at once that you are not trying to persuade them into giving you a large order, but that your sole purpose is to please them, and at the same time give them good work. It pays well in some instances to recommend something that you consider very suitable for them, which costs less than they might be induced to pay. You thereby gain their confidence, and while you have not sold them the highest priced picture you make, you can devote your attention to the increasing of the number of pictures, the finishing from different styles, etc., when in the end you will have as good an order in dollars and cents as you would gain by persistence in obtaining higher prices, and, besides, you have retained their confidence, which is invaluable.

705. **Customers Who Select Their Styles Before Sitting.**—This class of customers should be handled in the same way as those who sit first and order afterwards. Aim always to hold their confidence, and while it is advisable to strive to sell as high grade work as possible, do not

try to increase the quantity of their order at this time, but wait until they return their proofs. It is always a good policy to make extra negatives of different sizes for customers, even for those who select a certain size, for if you make something to their liking they can be induced to order.

706. **Number of Plates to Use.**—This is a very difficult question to answer, but the following suggestion may assist those who have not met with success otherwise. You should regulate the number of plates according to the customer and be guided by the grade of work ordered. Years of experience has taught us that a liberal number of plates under all circumstances is profitable, for the increased orders from numerous plates will more than pay your entire plate bill. We would suggest the following: Never expose less than two plates for your lowest grade cabinet work, say from $3.00 to $4.00 per dozen. For all work from $6.00 to $8.00 per dozen expose not less than four to eight plates, and for customers who are able to pay this price, it is a good policy to make an 8 x 10 negative in addition.

707. There is another class of customers whom it does not pay to make extra size negatives of. This is known as the working class. They are limited in means and it is not because they do not appreciate your efforts that they will not order from special size plates, but because they cannot afford to order them. This class of trade, however, must have the same consideration as the most élite and the same attention should be given them, but they do not expect anything out of the ordinary and it is only a waste of plates to make anything for them which you know in advance they would not pay for.

708. For work from $10.00 per dozen upward, you should make no less than 8 negatives, and as many larger sizes as you judge you may be able to sell prints from. A very important consideration when making numerous exposures is to strive to make each negative entirely different from the others, for it is on account of the different

positions that you induce your customers to increase their order.

709. **Collecting a Deposit.**—For the majority of photographers this is one of the most difficult parts of the business. The photographer, to be successful, should make it a rule to always collect a deposit on all orders except in extreme cases of select trade, where it might give offense. If you establish a rule of collecting a deposit on all orders at the time of sitting, you will experience less difficulty in obtaining good orders and you will always meet with less loss. The manner of asking for a deposit has much to do with the successful obtaining of it. It would not do, for instance, to say, to the customer, "Will you please pay a deposit?" Such a method might indicate to them that you mistrusted their honesty. On the contrary, if you have an established rule (which you must have to be successful) of obtaining a deposit from all, then, when registering the customer, noting the name and address and calling them by name, say "Do you wish to pay the full amount today or only a part?" They may reply, "Is it customary to pay in advance?" You may state, "Yes, it is our custom," and you could further say that "Some customers pay the full amount, others only a part, and since you do not know how many pictures you may require, I will just credit you with $5.00 or $2.00," as the case may be. Your judgment must be based upon the amount of the order, and conclude with stating that this will be perfectly satisfactory. In other words, leaving them to understand that this is a strict rule and that it is not the amount that is so essential as it is the matter of carrying out the established rule. Do not deviate from this position, for your customer will respect you more for it, as you are conducting your business on business principles, and even if occasionally you meet with a grumble you may off-set it with a smile and some jolly remark and take extra pains that the customer's proofs look well, and, above all, *do not disappoint them in time of finishing.*

710. **Re-Sittings.** — The photographer who makes

many different positions of his customers will have little trouble with re-sittings. Where re-sittings are desired it is usually because something is wrong. It may be the dress, it may be your fault. In every case if you find it is your fault and you are not satisfied with the proofs, even if the customer is fairly well pleased, suggest that they sit again. Say to them, "Really I am not pleased and I know I can do better; sit once more and we will then compare the new proofs with the former ones." You thereby gain their confidence and appreciation. On the other hand, even if the proofs are fine, should the customer request a re-sitting, agree at once and proceed to make new sittings. It is not good policy to try to convince them that the proofs are good, for in doing so, you place your judgment against theirs. They are the purchasers and it is, therefore, they who are to be pleased; and in case the first proofs were good, re-sit them willingly, suggesting that they preserve the first proofs and compare them with the new ones you are about to make. All this leaves a good impression and really places the customer under obligations to you, which often results in a much larger order, as well as appreciation of the pains taken.

711. There are times when customers will judge the proofs as they would a finished picture. Unless the negative has been proof-retouched they will not appear as well as they should, and in fact more re-sittings are caused owing to careless and uneven printing of the proofs than from any other cause; therefore, we advise that all negatives be proof-retouched, and, with this done, if you are called upon to make re-sittings, by all means do so willingly and you will profit by it.

CHAPTER XXXVI.

Studio Bookkeeping.

712. **Introduction.**—The studio system, to be practical, must be as simple as possible, and require as little duplicate recording as is absolutely necessary. The first step in establishing a business system is to open a bank account, and all money received should be deposited in the bank. All bills amounting to more than $1.00 should be paid by check. One advantage of employing this method is the prestige it will give you among business men. The majority of banks will supply you with special check books, free of charge, with your name and the character of your business printed on each individual check. The photographer should be a business man, and as all business men do business with banks and bank all their receipts, you should not fail to avail yourself of this privilege.

713. Although there are different methods which may be employed for the proper handling and keeping of a perfect and systematic record of the studio business, the following is the method adopted in many studios: As no studio can exist where general credit is given, and all should be conducted on a *cash basis,* we will consider that all business done is cash and that no accounts are carried. When the pictures are delivered they must be paid for in full. There is no need of carrying on a business in any other manner, and credit given the customers will invariably cause considerable loss in course of time. There are cases, of course, when you are dealing with friends and some of your best trade, that you may find it necessary to favor them, but even then you should keep a record of the transaction in a small ledger and render a bill the first of the month.

The Schriever Studio Register

Year 1908

DATE Month	Day	No. of Neg.	NAME	ADDRESS	Proof Ret'd.	Order From.	No. and Style Ordered		No. Negs.	Amount of Order	Amount Paid	REMARKS
March	7	35540	Jackson, C.E.	849 E. Drinker St.	3/10	3/24	12	Steels	1	6 00	2 00	3/4 length dotted bow tie
		35541	Miller, Mary	419 No. Sixth Ave,	3/11	3/25	12	Cards	3	1 00 4 00	2 00	white feather in hat dark dress
		35542	Mrs. Reynolds, W.H.	115 Cherry St.	3/10	3/24	24	Plat	2	20 00	18 00 2 00	

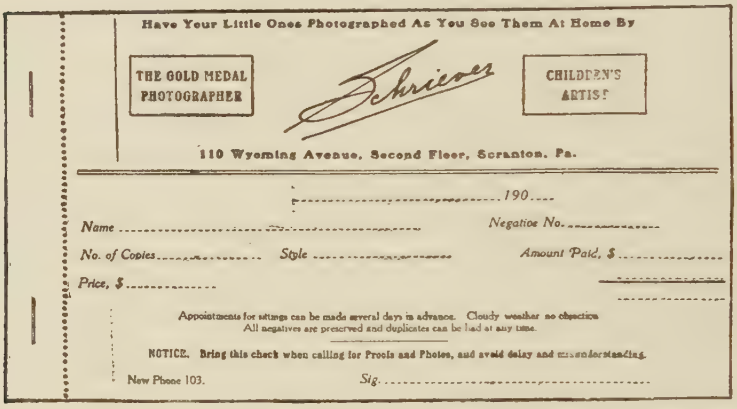
(884)

Illustration No. 91
Studio Register
See Paragraph No. 714

714. **The Studio Register.**—The first and most important book to be considered is the studio register. There are many standard forms that may be obtained from any photographic stockhouse, but these fail to provide for the record of the necessary items for the modern business. The most successful form to employ, and one that has received a thorough, practical test in some of the largest studios, is that shown in Illustration No. 91. The size of the page in this book is 11½ x 13½ inches, and the book contains 456 pages, yet the number of pages is immaterial. This register should be well bound in half leather, as it will have considerable usage. The lines on which the data is written should be one-half inch apart, in order to allow of plenty of room for giving full information regarding each order. In this way it will be possible to place twenty names on a page and the complete book will hold 9120 orders.

715. The date is placed in the first space to the left, the number of the negative in the next, and then the name. The name of the customer should be written first, with the initials following. The street address is placed in the following column under its proper heading. It is not necessary to have a space for recording the date when the proof is delivered to the customer, for a rule should be established that all proofs are to be mailed or delivered the following day after the sitting is made. The date the proof is *returned* should be recorded, however, and also the date the order is promised for delivery. The number of pictures ordered as well as the style are placed in the next space, then the number of negatives from which prints are to be made, the total amount of the order and the amount paid. In the column under remarks it is usually customary, especially in studios where a large number of sittings are made, to make a note of the style of dress and waist or tie worn by the subject, or any mark that will lead to their identity when the negatives come from the dark-room after having been developed, dried and made ready for registering.

716. **Recording the Sitting.**—The order for the sitting may be recorded before the customer is photographed, but usually it is better to make the sitting first and then register him afterwards. There is an advantage in registering the customer after the sitting is made, in that after the pains taken in making the sitting the customer feels pleased


Have Your Little Ones Photographed As You See Them At Home By

THE GOLD MEDAL PHOTOGRAPHER

Schriever

CHILDREN'S ARTIST

110 Wyoming Avenue, Second Floor, Scranton, Pa.

....., 190....

Name ..... Negative No. .....

No. of Copies..... Style ..... Amount Paid, $.....

Price, $.....

Appointments for sittings can be made several days in advance. Cloudy weather no objection
All negatives are preserved and duplicates can be had at any time.

NOTICE. Bring this check when calling for Proofs and Photos, and avoid delay and misunderstanding.

New Phone 103. Sig. .....

Illustration No. 92
Receipt Book
See Paragraph No. 717

and it is much easier to obtain a deposit, as the negatives are already taken and there is no chance to refuse even if he or she were so inclined. Therefore, we would recommend the registering of the customer after the sitting is made.

717. **Receipt Book.**—A receipt should always be given when payment is made. A very good form is shown in Illustration No. 92. A convenient size receipt blank would be one about $5\frac{1}{2} \times 3\frac{1}{4}$. These receipts, of course, should be printed and it is an excellent plan to have them bound in pads with a blank sheet of light yellow paper between each receipt. A sheet of carbon transfer paper should be placed between the receipt and the blank yellow sheet of paper. In this way a perfect duplicate of the receipt will

be made on the blank sheet, and when the original receipt is torn off and given to the customer you will have a record of it in your stub book.

718. As will be seen a little later, this duplicate receipt in your book will be of vital importance for this particular system, as it gives you the record without its being necessary to copy it a second time; therefore this form requires but one transcript in addition to the original record in registering. The customer is instructed to present the receipt when calling for proofs (unless they are mailed out), and also when calling for the photographs, for this will avoid delays and misunderstandings. The receipt contains a complete record, the name of the customer, the date they sat, the number of their order, the number of pictures originally ordered, the style, total price and the amount paid. This is all the entry that is made at this time until the proofs are returned and the final order given.

719. When the proofs are returned a record should be made in the studio register of the date, and also the date when pictures are promised. It is customary to promise delivery of pictures in two weeks. The total length of time, however, is not at all arbitrary and may be determined by the photographer. *Under no circumstances, however, promise pictures before you know conscientiously that you will be able to deliver them. When you make a promise keep it.* If there is any change in the amount of the order the item may be inserted directly above the one already placed in the register. For instance, referring to Illustration No. 91, Miss Mary Miller, under order No. 35541, desires to have a dozen pictures, but wants them finished from three negatives. A charge of 50 cts. is made for each additional negative, therefore, the amount of $1.00 should be inserted directly above the $4.00. The total amount of her order is, therefore, $5.00. As she has made a $2.00 deposit, the balance due is $3.00, which amount is to be paid on delivery of the pictures.

720. When the pictures are delivered, the balance to be paid on the order, which will be the difference between

the total amount of the order and the amount originally paid, should be inserted above the amount paid. For example, Order No. 35542 of Mrs. W. H. Reynolds, for $20.00. She paid a deposit of $2.00 and when she received her pictures she paid the balance, $18.00, and this amount was placed above the $2.00. This balanced Mrs. Reynolds'

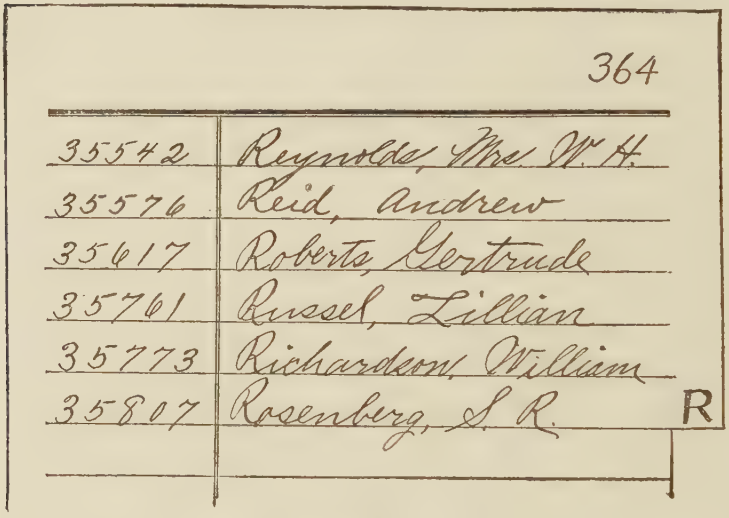


Illustration No. 93
Index Book—Alphabetically Arranged
See Paragraph No. 721

account and she was given a receipt for the amount, a carbon copy of which remained in the receipt book. By checking up your carbon receipts with the register, you at once see that the pictures were delivered and the full amount of the account was paid, and by checking your carbon receipts with your cash they must balance, thus giving you a record of all your business. By handling the studio business in this way there is little bookkeeping and practically but one record to be made, the record being complete in every respect.

721. **Alphabetical Book.**—In order to facilitate matters in looking up duplicate orders, or when occasion requires

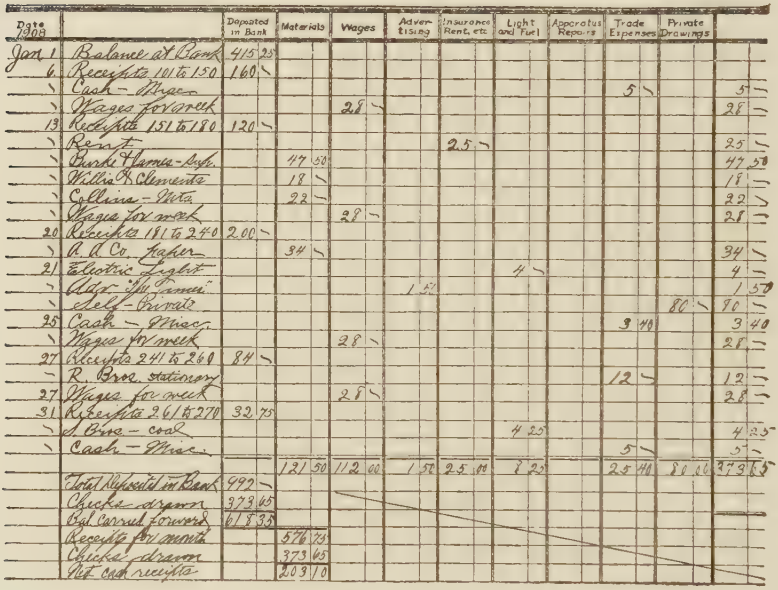
looking up the original order, an alphabetical book should be used in connection with the studio register. In the studio register all customers are registered numerically. The name and number only of each customer is then registered in the alphabetical book, in alphabetical order. The ordinary commercial book or cash-book, alphabetically indexed throughout, may be obtained, in which to record the names of all customers, as shown in Illustration No. 93. The surname should be written first and then the initials. The register number should be placed opposite the name.

722. As stated above, it is very essential to have this book with the customers' names filed in alphabetical order, for it will enable you to find any back order for a customer at any time, as soon as you learn their name. For instance, if Mr. C. G. Pettibone should come into the studio and desire to have you duplicate an order which he had given for photographs some two or three months previous, or perhaps a year ago, you could immediately turn to the letter **P** in your alphabetical book and on looking down the column find the name and opposite it the register number, which we will say was No. 375. With this number obtained, the next step is to go to the studio register and as order numbers are arranged numerically in this register, you can very readily find No. 375, where is to be found a complete record of the order, and the pictures may be duplicated exactly as the original order given.

723. **Cash Book.**—A regular cash book may be procured, but one especially arranged as shown in Illustration No. 94 will be a very convenient one to have, as it provides space for recording various items so that at the end of the month it is possible for one to total up each of the different columns and know exactly the amount of that item. For instance, on referring to Illustration No. 94 the expense for materials for the month of January was $121.50.

724. In this book should be recorded the total of the day's or the week's receipts, which amount is to be taken from the carbon copies of the receipts from your receipt book. Checks as drawn should be entered in the cash book,

together with the name of the payee, and the amount under its proper heading, as shown in Illustration No. 94. At the end of the month a grand total is made of the individual column and this amount subtracted from that deposited in the bank. The difference represents the cash balance, this amount agreeing with that of the bank pass book. If there is any discrepancy the items in the pass book should be



Date 1903		Deposited in Bank	Materials	Wages	Advertising	Insurance Rent, etc.	Light and Fuel	Apparatus Repairs	Trade Expenses	Private Drawings	
Jan 1	Balance at Bank	415 25									
6	Receipts 101 to 150	160 ~									
~	Cash – Misc.								5 ~		5 ~
~	Wages for week			28 ~							28 ~
13	Receipts 151 to 180	120 ~									
~	Rent					25 ~					25 ~
~	Burk Flame-Apt.		47 50								47 50
~	Willis R Clements		18 ~								18 ~
~	Collins – Mats.		22 ~								22 ~
~	Wages for week			28 ~							28 ~
20	Receipts 181 to 240	200 ~									
~	A. A. Co. Paper		34 ~								34 ~
21	Electric Light						4 ~				4 ~
~	Adv. – The Times				1 50						1 50
~	Self – Private									80 ~	80 ~
25	Cash – Misc.								3 40		3 40
~	Wages for week			28 ~							28 ~
27	Receipts 241 to 260	84 ~									
~	R. Bros. stationery								12 ~		12 ~
27	Wages for week			28 ~							28 ~
31	Receipts 261 to 270	32 75									
~	J. Bros – coal						4 25				4 25
~	Cash – Misc.								5 ~		5 ~
			121 50	112 00	1 50	25 00	8 25		25 40	80 00	373 65
	Total Deposited in Bank	499 ~									
	Checks drawn	373 65									
	Bal Carried Forward	61 835									
	Receipts for month		576 75								
	Checks drawn		373 65								
	Net cash receipts		203 10								

Illustration No. 94
Cash Book
See Paragraph No. 723

gone over, as well as your own cash book record, when the error will probably be found. As a rule, if any mistakes occur, you will find them due to mistakes in your figures rather than to the bank's mistakes, as there is very seldom any errors made at the latter. Whenever mistakes do occur you should investigate at once and see that your account is properly balanced.

725. **Duplicate Orders.**—Duplicate orders should not be recorded in the studio register, as it will be far more convenient to have a special place for keeping a record of these orders. It is advisable to procure a cheap commercial cash or day book and in it record all duplicate orders, first giving the original register order number, then recording the customer's name and number of pictures desired, the style of finish, the total amount of order, the amount deposited and day when promised. A slip containing the register number of each negative wanted should be prepared from the duplicate book each day and the negatives brought to the office where the duplicate order is written on the envelope. In addition to the order there should appear the date of duplicate order and the date promised.

726. A collection of good negatives is one of the biggest assets to the business. When a duplicate order is received all that is necessary is to look up the negative and finish the picture. There are no plates to pay for, no sitting to make, no developing of the negative, printing proofs or retouching, and for this reason duplicates are usually supplied at a slight reduction of the price charged for the original order. Generally a reduction of $1.00 on the dozen is made. For example, if the original order was $5.00 per dozen, the price for duplicate orders would be $4.00. Reference to the studio register will acquaint you with the price originally paid and also give you information as to the style of picture, etc.

727. You should require at least a deposit on duplicate orders, although it is customary with many photographers to have the full amount paid at the time the order is given.

728. On all of your printed matter or stationery it is well to call attention to the fact that duplicate orders can be had any time and that they will be finished equally as good as the original order and at a slight reduction in price.

729. **Checking Up the Day's Work.**—The amounts paid—which are designated in the right hand corner of the stubs (duplicates of the original receipts)—for a day's work should be added at the end of the day, or in case of small

studios, at the end of each week, and this amount placed in the cash book as shown in Illustration No. 94. The numbers of the receipts issued that day, or for the week, should also appear in the cash book as shown.

730. When the duplicate receipts for the day or the week have been totaled, a rubber band may be placed around the used receipts and front cover, thus separating the checked up receipts from those unchecked. By placing the rubber band around the checked carbon receipts, there will be no danger of duplicating onto the receipts of the preceding day.

731. When all of the receipts in the receipt book have been issued, the book with its carbon copies should be filed in a place specially reserved for it and the date of the last receipt noted on the outside cover. Whenever it is desired to refer to any receipt, it is a very easy matter to do so when the carbon copies are filed in this manner.

CHAPTER XXXVII.

System for Finishing Work.

732. In large studios it is customary to promise work finished in two weeks from the date proofs are returned. The general public have become accustomed to this rule, therefore they do not expect an earlier delivery.

733. Where a large amount of work is to be handled or finished in a small studio, it is not advisable to promise work in a shorter time than two weeks. This will give you ample time to finish the work well and will also enable you to handle a large amount of business during the rush season, and, independent of this, you can make and finish rush orders without interfering with the progress of the regular orders, and yet get all work finished on time. If you adopt the two-weeks plan, which means fourteen days, you must arrange the finishing so that the work is delivered to the office on the thirteenth day all prepared for delivery. This can only be accomplished by establishing a system in every department. A proper system is important and applies to the one-man studio as well as the larger studios where considerable help is employed.

734. Whatever system is adopted it should be followed to the letter. The following system is employed in the majority of successful studios, and with alterations to suit conditions will work well in any studio. This system provides for the methodical handling of the customer from the making of the sitting to the finishing of the work.

735. *First.*—If any particular style has been selected at the time of sitting it should be recorded in the studio register. In many instances, when dealing with good trade, there is no particular style selected and customers leave the selection to the photographer, or wait until the proofs

are returned before placing their order. In either case the customer is registered just the same in order to give the negatives a register number.

736. *Second.*—All plates exposed should be developed the same day they are made and allowed to dry over night.

737. *Third.*—The negatives should be gathered up the first thing in the morning and taken to the office for registry. On the left hand side of the upper edge of the plate may be written the register number and on the opposite end the name, leaving a blank space between until the proofs are returned, when the order is recorded in this space. After the negatives are registered they should be sent to the proof retoucher, who smooths over the really rough places only. This is important, for many times proofs are condemned and an additional order is lost because the face looks coarse and rough in the proof, while with a few minutes work in smoothing up the rough places, the proof looks improved and the customer is better pleased.

738. After the negatives are proof-retouched they are at once put out to print, and right here is an important consideration. Do not be careless about your proofing, but print as carefully as if you were making finished prints. Have all proofs printed evenly and to the same depth, so that they will all appear at their best. Each proof should be numbered on the back to correspond with the number on the negative. After proofing, all negatives of the same number are placed in one envelope and the number written on the envelope, which is then placed on a shelf reserved expressly for proofed negatives while the proofs themselves are sent to the office where they are sorted and placed into "return" proof envelopes. These envelopes for general use, may have printed on the outside the name and address of the photographer as well as special instructions regarding the proofs. Suggestions as to the wording of these instructions will be found in Illustration No. 95.

739. Before placing the proofs in this envelope, however, the back of each proof should be stamped with a rubber stamp bearing the photographer's name and address. The

"MOTHER AND CHILDREN"

Study No. 34—See Page 582

Brainerd & Co.

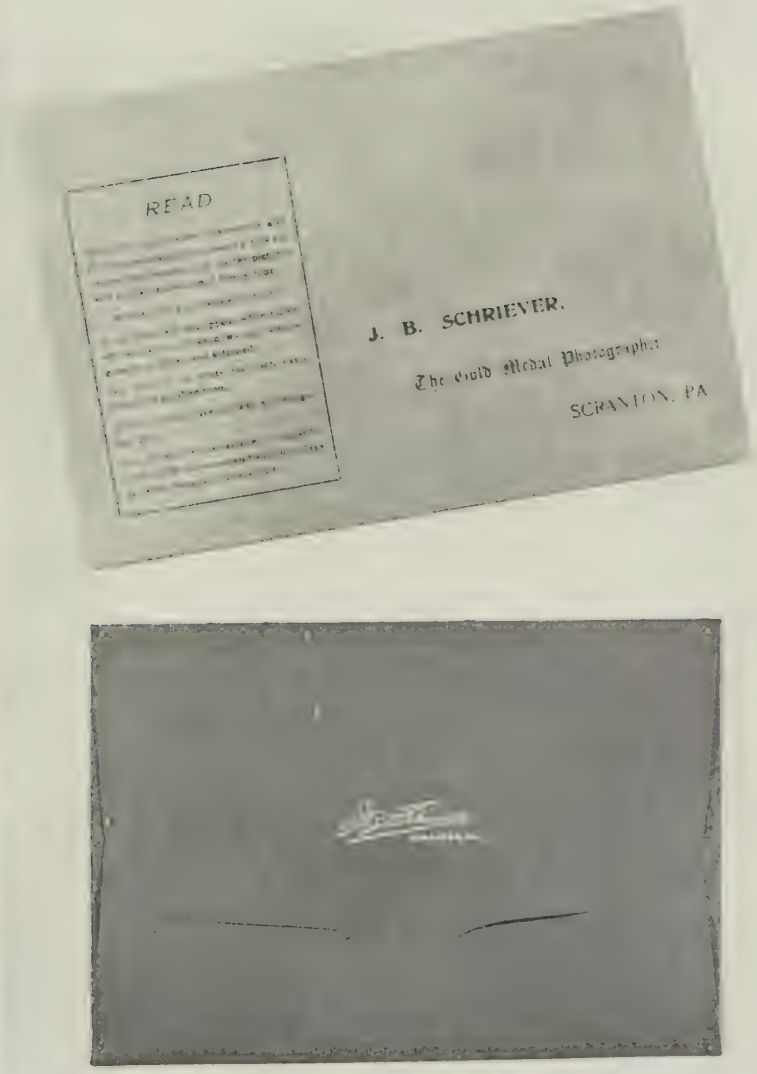


Illustration No. 95
Proof Envelopes
See Paragraph No. 738

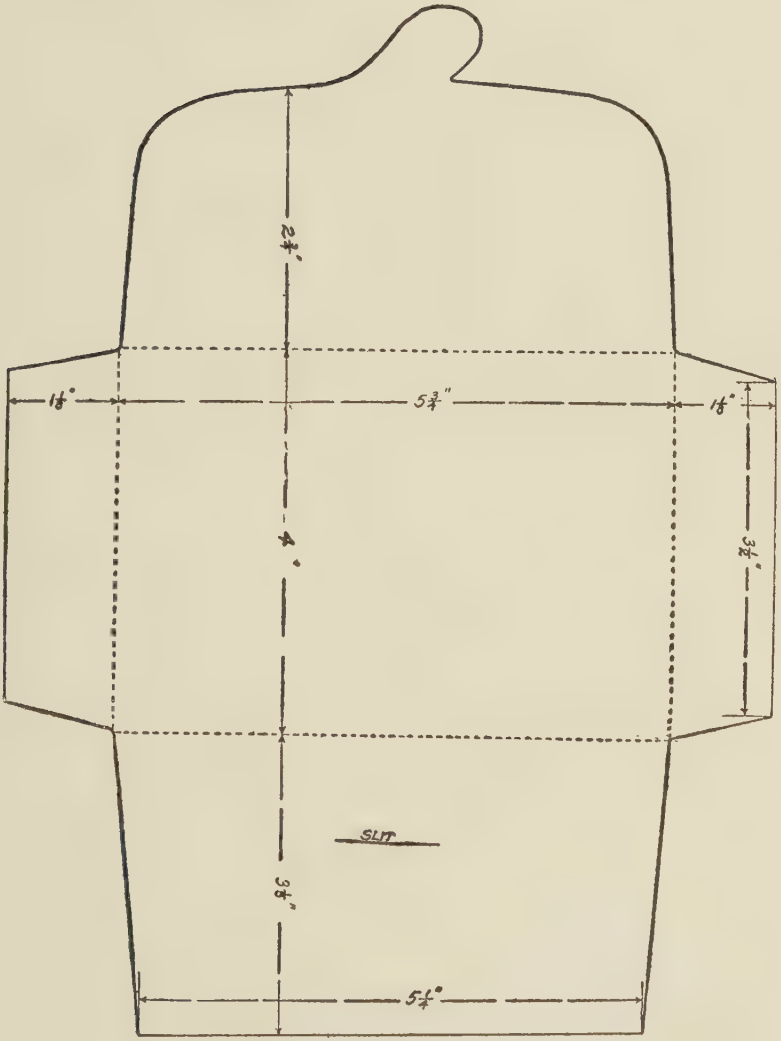


Illustration No. 96
Diagram of Special Proof Envelope
See Paragraph No. 741

envelope containing the proofs should be enclosed in a manila or white envelope, and this latter sealed and addressed to the customer, who, in turn, is supposed to return the proofs as soon as possible, in accordance with the instructions which are given on the proof envelope.

740. Where the more exclusive trade is catered to, or even in a general studio where high-grade work as well as the commercial styles are made, it is advisable, with the best work, to present your proofs in a more exclusive manner, and some specially neat envelope should be employed that will give a further good impression as to the value of its contents.

741. In Illustration No. 95 we present a very suitable folder, which is made of regular folder cover-stock of a deep green color. The line drawing (Illustration No. 96) shows the pattern required for cutting this envelope, and the illustration shows the envelope folded, bearing the proofs ready for delivery. It has the appearance of a pocket-book when folded and it is neat and novel and goes a long way towards being an improvement over the commercial proof envelope. This proof-folder can be obtained from almost any reliable card manufacturer. Of course, they will need to be made to order; or you can make them yourself if you wish. If you have them made, it is advisable to have the name and city printed in white ink on the face and on the back you may print the following: *Proofs* from the *Smith Studio,* Scranton, Pa. While any size folder may be made, the illustration and line drawing show a folder for cabinet-size proofs. When using this proof-folder for mailing proofs always enclose it in another white envelope.

742. As some customers prefer calling for their proofs in person it is advisable to hold all proofs until the close of the business of the day, when those that have not been called for may be mailed out.

743. Many photographers prefer the customer to return the proofs in person, for it gives them an opportunity to point out the good qualities in the different negatives and offer other suggestions that may lead to an increase

of the original order. Therefore it is advisable to inform the customer after making the sitting, that if so desired the proofs may be returned in person and that if you can be of any assistance in the selection of the best negatives, you will be pleased to help. In many instances your customer will be pleased to have your judgment of the negatives, and it is up to you to select the best and as many of them as is consistent. After receiving the orders at the studio, or when the proofs are returned by mail, accompanied with the order for the number of pictures wanted, mark on the back of each proof ordered from, the style in which the picture is to be finished and the number of prints to be made from that particular negative, also the style of mount and any other data for the information of the retoucher or printer, including the date proofs were returned and the date the finished pictures are promised.

744. If your different styles of mounts are arranged in alphabetical order so that you can refer to them by letter, it will simplify matters and supply sufficient data to indicate the order. Where more than one negative is ordered from, each proof ordered from should be lettered following the register number. For example: Mrs. Jones returns four proofs from which she wants six prints each. You will record her order on the back of the proofs as follows: No. 84767-A—6 Plat.—B Mt.—4/8—22; while the second number would be No. 84767-B—6 Plat.—B Mt.—4/8—22; the third 84767-C—6 Plat.—B Mt.—4/8—22; and the fourth proof 84767-D—6 Plat.—B Mt.—4/8—22. This would indicate that Mrs. Jones, whose register number is 84767, had ordered two dozen platinum pictures, style B mount and her order is from four negatives, 84767-A, B, C and D. The order was recorded on the 4th month and 8th day and the pictures were promised on the 22nd, which is two weeks from the date of return of proofs. These proofs are placed in the proof drawer and when time permits, usually towards the close of the day, the negatives corresponding with the proofs are looked up and they are brought to the office where the order is recorded in the studio register.

745. Having, at the time of making the proofs, placed all negatives bearing the same number in one envelope, all that is required is to look for the envelope containing that particular number corresponding with your proofs and you will find all of the negatives in this envelope. The negatives corresponding with the selected proofs are gathered from the envelope, while the remainder, or what is known as "discards," may be placed in a wooden box. A case in which dry plates have been packed is very convenient. The "discards" should be placed in this box very carefully, as the customer may order from some other styles later. Each box of "discards" should, when filled, be dated and stored away for at least 6 months after which you will be safe in destroying them, or, better still, sell them to some dealer who makes a business of buying negative glass. It is a good plan to scratch the surfaces of the negatives, thus destroying the image, before selling these negatives.

746. When all of the negatives corresponding to the proofs from which orders have been received are collected, these negatives, together with the corresponding proofs placed between them, are taken to the office. Here each negative and its proof are placed in a negative envelope on the outside of which should be written the order number, the name of the customer as well as the style and number of pictures ordered from that negative. At this same time the increased order (if any) is also recorded in the studio register so that the order on the proofs and negatives correspond exactly with the order in the register.

747. **Retoucher's Duties.**—With this accomplished the negatives are sent to the retoucher, who immediately records in a note book (kept for the purpose) the number of all the negatives received. On finishing the retouching of each negative he checks the corresponding number in his note book and these retouched negatives are then sent to the printing room.

748. **Printer's Duties.**—The printer now takes charge of them, recording the negative numbers in his note book

just as the retoucher did, also noting date he received the negatives and the date the order is promised, and then it is his duty to see that the order is finished in due time.

749. **Time for Finishing.**—Each department has a certain length of time in which to finish the work of that department. Where orders are promised in fourteen days from the date the proof is returned, the retoucher is usually allowed six of the fourteen days to complete the retouching and get the negative in the hands of the printer. In other words, on the seventh day after the proofs are returned and in the hands of the retoucher, the negatives must be in the printing room, thus giving the printer the remainder of the time in which to finish the work.

750. **Retoucher's and Printer's Daily Report.**—At the end of each day the retoucher turns into the office the numbers of all the negatives he retouched that day. The printer turns in a similar list. One advantage of this system is that the proprietor knows exactly how much work the retoucher and printer have done. Another advantage of the system lies in the fact that you can easily ascertain just how near an order is completed. Should a customer come into the studio a few days before the photographs are promised to be finished and make inquiry regarding his pictures—or he may possibly want to have some of them finished in a hurry—by simply referring to your register you will find the date the order was recorded and the day promised. If, for example, the customer comes into the studio seven days after the order was recorded you will know that the negative must be in the hands of the printer. By referring to your slips of numbers furnished by the printer, you will be able to ascertain if he has any finished prints from these negatives. If the numbers do not appear on his slip you turn to the retoucher's slips and you will very likely find the numbers there, and by observing the date on the slip you will note when the negatives were sent to the printing room and you can then judge very readily the earliest possible date you can deliver them. All this is done without leaving the office.

751. Should the numbers of the negatives in question not be found in either the printer's list or the retoucher's list, you at once have a line on your retoucher and you will naturally make inquiry of him why such negatives were not yet in the hands of the printer as the required time had expired. Ordinarily, assistants that are trained and become accustomed to a certain system, will find it much easier working, for they know exactly how much work must be done and it is their duty to do it within the required time. On the other hand, they also know that you are watching the work and can instantly locate the delay and the person responsible for such a delay, all of which has a tendency to keep each employe working faithfully, so that all work will be completed on schedule time.

752. **Finishing Days.**—In the average studio there should be at least two days in the week set apart expressly for finishing and delivering work. If the bulk of the work is on printing-out paper, certain days of each week should be established for toning and finishing. It is absolutely essential that a system be installed in the printing department and unless the business is a large one, where several printers are employed, so that all kinds of papers may be printed each day, then certain days of the week should be devoted to making prints on printing-out papers and other days for printing on platinum paper. Weather conditions, however, may alter regular plans to some extent, yet it will be seldom that this will occur sufficiently to interfere with regular deliveries and as the majority of modern studios are equipped with artificial light for printing, the weather has little or nothing to do with the system in the printing department. In the smaller studios or places where developing papers are used to a great extent, artificial light is used entirely, regardless of weather conditions, consequently there are no delays in orders.

753. **Finishing the Work.**—The pictures should be finished complete before leaving the work-room and they should be neatly mounted, spotted and in fact ready for delivery the day previous to the date the orders are due.

754. **Filing Finished Orders.**—When finished, the pictures should be sent to the office where they are inspected by the party in charge and if satisfactory they should be placed in tissue enclosures and carefully wrapped ready for

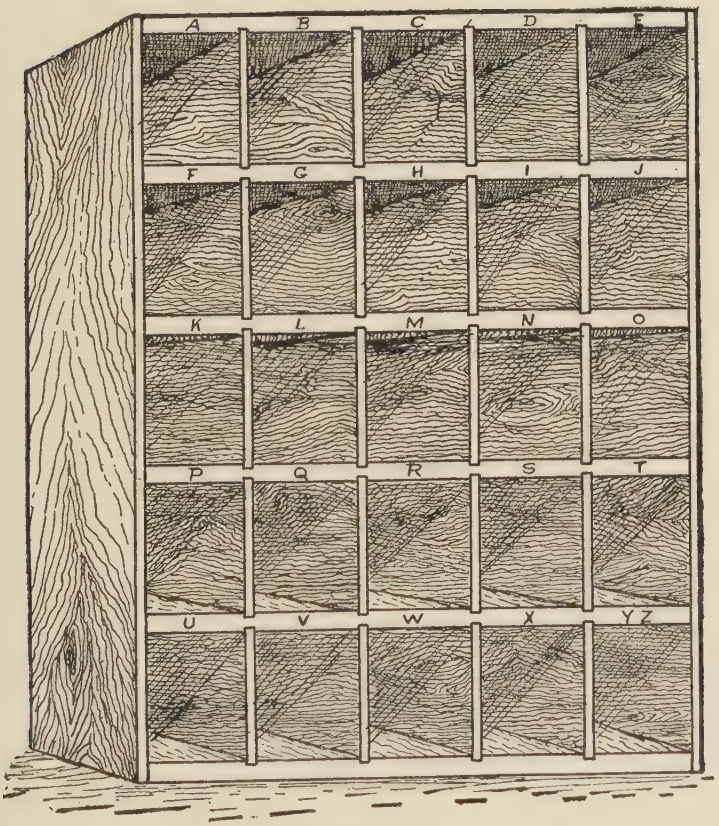


Illustration No. 97
Cabinet for Filing Finished Orders
See Paragraph No. 755

delivery. A cabinet of some kind should be provided in the reception room to receive the pictures and be placed where it will not be at all conspicuous yet handy for filing the finished work, and used only for this purpose.

755. A convenient cabinet would be one with 24 or 25 sections lettered alphabetically. The spaces in this cabinet should not be less than 8 x 8 inches and about 12 inches deep. By filing the finished pictures in this cabinet alphabetically, it will be a very easy matter to find an order when the customer calls. For illustration of an inexpensive but suitable cabinet, see Illustration No. 97.

756. **Filing Negatives.**—In some department of the studio one should provide a system of shelving, reserved for filing of negatives from which orders have been received and finished. The shelves should not be less than twelve inches deep and about eleven inches apart, for 8 x 10 plates, and nine inches apart for 5 x 7 plates. The negatives should be placed on their edges on these shelves in numerical order with the numbered side facing out, each row containing one hundred negatives. The first row, for example, containing negatives from 1 to 99 should be placed on the left end of the top shelf. The next row of negatives, which number from 100 to 199, will be stacked to the right of the first, etc.

757. In placing the negatives in the negative envelope, always place the glass side of the negative next to the front of the envelope. This will save any marring or scratching of the negatives, for many times in searching for duplicates, one is very apt to slide a negative (even when in the envelope) over the negative back of it, and if there is any grit or sand in the envelope it is liable to scratch that negative, but if the glass side is facing the front of the envelope there is no danger of this. This is important.

758. As soon as the printer has finished an order from the negative, the proof is placed in the negative envelope with the negative, the glass side of which is to the front of the envelope as above stated, and both are filed away together. These negatives are valuable assets of the photographer and must be guarded with the utmost care, for frequently duplicate orders will be received, and the greatest amount of profit is derived from these orders.

CHAPTER XXXVIII.

Condensed Schedule of System in the Work-shop.

In General.

759. Promise all work two weeks from return of proofs.

760. All work to be delivered, finished, to the office on the thirteenth day.

In Detail.

761. Register customer with name, address, number, etc., in studio register.

762. Develop all plates same day, and allow to dry over night.

763. Take negatives developed previous day to office first thing in the morning.

764 Write register number on upper edge of plate in one corner; name on other corner.

765. Send numbered negatives to proof retoucher.

766. Print proofs from proof-retouched negatives.

767. Number each proof on back to correspond with its negative.

768. Place all negatives of same number in one envelope, marking register number on outside of envelope.

769 Place envelope with negatives on "proofed negative" shelf.

770. Send proofs to office, stamp photographer's name on back, and place in a "return-proof" envelope.

771. Enclose "return-proof" envelope in a mailing envelope, and address latter.

772. Hold proofs until close of day's business, in case customer calls in person. Mail those not called for.

773. Mark on back of each proof returned, number of pictures wanted, style of finish, mount, etc., date when proof was returned, and date when finished pictures are promised.

774. If more than one negative is ordered from, register each negative and proof as follows: 84767-A, 84767-B, etc.

775. Place proofs in proof drawer, and at end of day look up corresponding negatives in negative envelope; bring latter to office and register in the studio register.

776. Place discarded negatives in a wooden box and hold for at least six months.

777. Place each selected negative and its proof in a negative envelope, on which is noted register number, name, number of pictures ordered, etc.

778. Send negatives to retoucher, who records the numbers in a note-book, and who is usually allowed six days to complete retouching. A list of negatives retouched each day is turned in to the office at night.

779. On seventh day, retoucher sends negatives to printer.

780. Printer finishes the work and turns in each day a list of finished negatives to the office, work to be finished not later than thirteenth day from date of return of proofs.

781. Have special days for printing and toning printing-out papers and platinum papers.

782. All work to be finished complete, mounting, spotting, etc., before sending in to office.

783. Enclose work, after inspection and acceptance by the one in charge, in tissue enclosures and wrap up for delivery.

784. File in cabinet for finished work.

785. File used negatives in numerical order on special shelves, placing negatives in negative envelope, glass side next to front of envelope.

CHAPTER XXXIX.

Show-Case.

786. The show-case should be given as much consideration as the reception-room, no matter what the standard of work of the studio is, or where it is located. A display of some kind should be placed at the entrance, if it be not more than one picture. A hundred dollars spent in an attractive display case at the entrance to the studio, and in making the hall stairway which may lead to the reception-room appear attractive, even though it may be simply papered or kalsomined, will add very materially toward inducing customers to come to the reception-room. The show-case, the hallway, etc., must be kept clean, and everything done within your power to remove any unsightly or objectionable features.

787. Many studios are located above the first floor, and therefore require some display at the entrance, while other photographers are fortunate enough to have a ground floor studio, with front windows for display purposes and therefore have quite an advantage.

788. As much space should be devoted to display purposes as possible, consistent, of course, with general conditions. At least one show-case 3 x 4 feet in size, or one covering the same area, should be used. It is better to have a case of this size and change the pictures in it often, than to have a large case and not change the display more than once a month. These display pictures should be thoroughly representative of your ability, and a few such pictures exhibited at a time is far more valuable than to attempt filling the show-case with more ordinary pictures which might not be so fully appreciated. When possible one should make it a rule to change the display at least once in two weeks—once a week will be far better. When

it becomes known that you make these changes often the public will soon get into the habit of watching for the new picture display, and will go out of their way to see what you have new in the case.

789. **Object of the Display.**—Your show-case should be so arranged that the people will become fascinated by it, and to such an extent that they will venture into your studio—your opportunity then begins. The photographer's own work is his greatest advertisement—the quality must, therefore, be of the highest class you are capable of producing. Examples of your work should be exhibited then in a conspicuous place, so as to attract attention of passers-by. The case should be a neat one, and the glass and all other parts of it kept perfectly clean. The majority of people act upon impulses, and if you have a clever display, and one that is frequently changed, people will irresistibly enter your studio, where otherwise they would simply pass by.

790. **Arranging Display.**—The inside of the case, on which the display is placed, should be a large board, covered, preferably, with black felt or broadcloth. This board should be removable. In fact, it would be advisable to have four such boards and then arrange four different displays. A display should be placed in the show-case in the morning, another one should take the place of the first display on the following morning, and so on until all four displays have been exhibited, each one remaining in the case for a day. On the fifth day place the first display in the case again, and alternate in this way daily for a period of one month, when an entirely new display may be prepared and the same system of changes be carried out.

791. Another method employed by some photographers is to simply have two background boards, on which to place the pictures, and to change the display once a week. Either of the above methods is adaptable for the average studio.

792. **Specialized Displays.**—Many photographers specialize on one particular branch of the work. For instance, one photographer may specialize on baby pictures, another

"CHIEF JUSTICE"

STUDY NO. 35—See Page 582

J. L. SCHNEIDER

"THE MUSE"

Study No. 36 — Elizabeth Flint Wade

on copies, another on ladies, another on men, and still another on group work or flashlight photography. Where the photographer specializes in this way the alternate display should consist of pictures he specializes in making, while the other displays may be of miscellaneous or special work. For instance, if a photographer specializes in the photographing of children, his main display should consist of baby pictures, and every other day these should be exhibited in his window. On the alternate days he may first show a display of ladies' photographs, on another day one of men, on another group photographs, while still another may be of miscellaneous subjects, men, women, children, etc.

793. Then, again, it is possible to show in the window different styles of mountings. Folders may form the subject of one display, plain mounted prints another, two or three prints neatly framed another, and an enlarged picture in a frame may form still another subject to introduce in the show case. There is an endless variety of material which any photographer can employ, if he will but give a few moments time and consideration to the matter.

794. Another excellent way of inducing people to continually observe the show-case is to reserve a certain section of it in which to display a particular picture. This picture should be placed in the case and remain for one week. Advertise through the local papers, and perhaps through the circulars which you have mailed, stating that you will give a prize to the first person seeing the new picture. You should state in your announcement that the picture occupying a certain space in your display window will be changed once each week. The first person who sees the new picture and comes to the office and mentions the fact is to receive the prize. The style of photograph which you give as a reward in this, as well as other similar contests, may be displayed in your case. One very attractive display, which is applicable especially to small show-cases, is the making of a composite group of babies, similar to the one shown in Illustration No. 58. This picture was made by cutting

out the outline of the little subjects and then artistically arranging these on one card. Two or three hundred of these heads, arranged in this composite form, will invariably attract a great deal of attention and cause considerable talk about you, and it is talk and general publicity that you want—in fact that you need—if your business is to be a success.

795. Additional interest will be taken in this display if you offer a prize of a special photograph to the first person calling at your office and giving the correct number of the babies in the group.

796. When finishing orders, and especially when you have an excellent negative and where the subject is a particularly attractive one, you should make an extra print, and have a drawer or a place to keep these extra prints, so that you will always have material on hand with which to fill your show-case.

797. **Special Attractions in Show-Case.**—The photographer should not be content with having simply an average display in his case. He should strive to call particular attention to his studio and to the exhibit, and in order to keep the people interested his display should be changed often.

798. Another way of attracting attention to the show-case is to photograph the backs of six or seven heads of prominent persons and place these in your show-case. To the person correctly guessing, within a specified time, the names of the persons thus photographed, you will give a prize of, say, two of your best photographs.

There are many other ways of attracting attention to your show-case, and eventually luring the customer into the studio. The most successful methods will be those you devise yourself, for it is unique schemes that attract the attention of the public. Always keep your name before the public. Do not allow them to forget that you are *the* photographer. Always produce results that will be a credit to you and that will never make you ashamed of your name appearing on any pictures you make.

CHAPTER XL.

Studio Advertising.

799. A merchant selling goods is an individual who is accommodating and conveniencing the general public by placing the goods or material which he sells within convenient and easy reach. This same merchant, through the medium of advertising, tells the buyers to just what extent he can serve and provide for them in his particular line—better than others, and, therefore, to what extent he is entitled to the patronage. If he is really better able to serve the public, and can convince the public of that fact, he will certainly get the patronage.

800. And right here is the point: Good advertising is nothing more or less than good arguments—the seller argues with the people concerning his goods, through his advertisements. If you make a strong statement in an advertisement, give a reason. Tell why it is so; then it is shown to be the truth and appeals to the reason. An unsupported statement that a thing is so is not convincing. The common sense point of an advertisement that appeals to the reason of the reader, and the showing why for good reason the thing must be so, and why the article is of real value to the buyer, is the kind of advertising that brings returns, and not the literary effort on the part of the one who constructs the advertisement.

801. It is taken for granted that the photographer knows how to make a good photograph, yet it does not follow that he knows how to make the public appreciate it, nor that he has the ability to make such photographs. Good, strong advertising will produce business, but the advertising must be backed up with the ability to produce good work, for the advertising would be short-lived if one were not

able to please the customers after once secured. On the other hand, one may be ever so capable and have extraordinary ability in producing the highest class of work, but if the public does not know it and he makes no effort to get customers, he may want for subjects until his business has failed entirely. By combining strong advertising, conservative business methods, a neat appearing studio and excellent workmanship, any studio can be made a success.

802. Mr. W. I. Scandlin says: "A good business man is like a good fisherman. Both throw out attractive bait and then leave it up to the fish to bite. If you could catch one-fifth of the people of your community who haven't been in a studio for five years, you would be kept busy. A lot of them will rise to the right kind of bait." It is our aim to give you in this instruction the right kind of bait to use, and if you are doing a good living business without publicity, by following these suggestions your studio can easily be made to double its present business, which means greater profits.

803. Competition is the life of trade, and if there are other studios in your community, so much the better. All lines of business are continually placing before the public the quality of their goods, prices, etc. Each and every one is telling how good and how cheap their products are, how prompt they are in their delivery, etc. The progressive photographer has the same privilege, but photography having been recognized as one of the arts, cannot consistently make a bid as to prices. Low prices cheapen your products and cheapen your studio. Therefore, when you advertise you should only call attention to the high grade of photographs you are making, the personal attention you give your patrons, the promptness of delivery, etc. Invite them to your studio to inspect your styles of work, etc., thus giving your studio an air of refinement which the picture-loving public is ever ready to appreciate.

804. **Waiting for Trade.**—There are far too many photographers who make little or no effort to work up new trade. They have a small display of pictures at the en-

trance; perhaps a display which has not been altered in any way for months, and they sit and wait for customers to come to the studio. If such a photographer can make a living, how much is there in store for those who will make a strenuous effort to get their name before the public, and offer something which will entice customers to the studio. It may be unquestionably stated that not more than one person in twenty is photographed once in two years. If one in twenty could be induced to come once a year, the business of every studio in any community would be doubled. If you are responsible for the publicity which doubled the volume of business in your community, you will receive more than double the increase in returns.

805. The fact that people do not come into the studio more often is not because they do not want photographs. It is due more to the fact that they do not absolutely have to have photographs, and on account of the general rush and bustle of people in these modern times photographs receive but little consideration, unless the subject is brought forcibly to mind.

806. The preceding chapters, on Business Methods in the Studio, must be given very careful consideration, for they are of vital importance. With careless work one cannot expect to be successful, no matter how strong and effective is the advertising.

807. The first and most important factor in studio advertising is getting and keeping your name before the public. In this you must be persistent. If your name is Brown emphasize the fact that "Brown" is *the* photographer. Keep everlastingly pounding at them that "Brown" is doing the finest work, that "Brown" is doing the business. There are various ways of accomplishing this. The newspapers in your vicinity should be made use of first, for these are usually read by a large majority of the people, and you can, through them, most effectively call attention to your studio.

808. **Newspaper Advertising.**—Large display advertisements are not to be recommended. They are not read

by the average reader, and a far more effective way of being sure that your name is seen is to insert short reading notices with the regular news items. Such reading notices need not be long—a dozen lines many times are sufficient, and the most effective advertisements are those that do not appear as advertisements but as news items. Thus the reader is forced to read the ad. before he discovers it is really advertising.

809. Three or four different notices could be interspersed with the news items, each having a different thought or idea expressed. The reader when glancing through the local items and having read the different notices, cannot help but be impressed with the photographer's methods of advertising and in consequence, he remembers it longer than he would if a straight advertisement were inserted. Of course, one should occasionally insert a straight advertisement, but in the local columns and owing to your general method of advertising, which should always be interesting, any special advertising you may do will be read.

810. The following paragraphs will give a slight idea as to what one may say in these reading notices:

811. **Photographs With Merit.**

Smith's $4.00 portraits possess the same artistic pose and finish that are the prominent features of his more expensive pictures.

812. **New Spring Gowns.**

Have a likeness made by Hopkins before your latest costume shows signs of wear. If what his patrons say is true, his special new folder photographs are immensely popular.

813. **Carefully Careless**

Is the predominating quality of Schriever's group pictures. Therein lies the secret of the ar-

tistic results accomplished by him in this exacting branch of photography.

814. **Schriever's "Roycroft" Portraits.**

The top-notch of artistic elegance has been reached in Schriever's latest photographic surprise. Picture to yourself a beautiful carbon portrait encased in an exquisite soft leather folder—like the famous "Roycroft" bindings and—well, they simply baffle adequate description. See them at the studio, 110 Wyoming Ave. Ask for the "Roycroft" Portraits.

815. **The Congress of Babies**

Has convened in fall session at the Gold Medal Studio. Bring the little ones to see them and the play house. They may elect to join this aggregation of dimpled humanity.

816. **The Art of Posing.**

Nothing contributes more to the artistic photograph than the ease and natural bearing of the subject. Keyed up to an unnatural pitch in anticipation of sitting under the searching eye of the camera, it is a test of the ability of the artist to disarm tense nerves and summon nature to the rescue. This, Schriever does to perfection. Judge for yourself at the studio, 110 Wyoming Ave.

817. One must not enter into newspaper advertising in a haphazard way. It is an art in itself. You should choose a paper with the largest local circulation. If you are to have your advertisement appear in each issue of the paper, it is very important that a change of wording be made for each day's advertising and that the subject matter mentioned should be timely; *i. e.*, a few weeks before Easter to insert a "reader" calling attention to Easter pictures,

the special styles, etc., suitable for this season of the year. During the holiday season call attention to a very acceptable gift for Christmas in the form of a special style picture you are making, etc.

818. Never allow an advertisement to be repeated for any length of time, especially out of season. For example: A reminder that a special style of picture makes acceptable Christmas presents should not appear in the month of January. One of the best forms of newspaper advertising is to secure personal "write-ups" which would, of course, appear in the body of news-matter. In one sense of the word these are not advertisements, yet they are one of the strongest forms that a professional man can use. It is a good plan to keep in touch with the chief reporters of your daily and Sunday papers and by favoring them by supplying photographs from time to time they will occasionally give you a good notice which costs you nothing.

819. Advertising is not necessarily of a direct nature. The doctor or dentist who wishes to establish a practice joins the local societies and clubs, and manages to be personally in evidence at as many social functions as possible; and in a similar way do other professional men take means to bring themselves into contact with their fellow townsmen who are able to do business with them and throw business their way. The best advertisement for a professional man is to become well known himself and those adopting this method of advertising may interest themselves in local matters and take part in social functions of the town or city. In becoming known, personally, the photographer's business will also become known. While it is good business to mix and become acquainted in this way, yet, under no circumstance, should you neglect the work at the studio, for the successful photographer is always to be found at his studio during business hours.

820. There is another class of advertising of good quality, which occurs when you are called upon to make pictures of some convention or gathering of any kind. A friendly reporter will often, if it is suggested to him, make

mention in his report of the fact that you were professionally present; and the advertisement is good. Cases of different kinds may present themselves, and whenever you photograph any event of a special nature, you should see that immediate mention is made of it in the newspapers.

821. As a class of paid-for advertising during the base-ball season, a notice of this nature may prove valuable if run in the news columns:

> 822. "At the opening game of base-ball between the Chicago and New York National teams, Mr. Geo. R. Smith made a very successful series of pictures during the game, including a portrait of Brown, who is regarded as the world's greatest pitcher. The pictures are on view at the studio at 735 West Jackson Blvd."

823. The amount of space occupied by this notice is worth much more than the same space in the advertising columns. For the commercial worker there is plenty of opportunity for much free advertising and there should seldom be a week that your name does not appear in the local papers in one connection or another, and you may also have one or two reading notices regarding some picture or special feature that you are offering, so that the public may at all times know that you are "up and doing" and always ready for business.

824. One who is a liberal advertiser with newspapers will be visited by all kinds of canvassers for advertisements. Promoters of bazaars, special church or school programs, will offer pages of their programs or hand books; perhaps the local school publishes a monthly magazine, with a limited circulation, and the editor will desire that you insert an advertisement; the local real estate agent who desires to print a list of properties to let and for sale—with someone else to pay for the advertising—these and many others will call and waste time. They are only to be encouraged, when you can clearly see that it is policy to accept their

offer on account of the orders you will indirectly receive, regardless of the actual advertisement, which usually is of little or no account from a business producing standpoint. Usually one is better off to exclude all such mediums from his list.

825. Many of the best studios employ an experienced advertising man to take care of their advertising. This is not so expensive as it at first may seem and if everything is taken into consideration you save money thereby. *First* of all, few men can prepare proper copy for advertisements; *second,* when one has the ability it requires special thought, which means time; and *last, but not least,* by an arrangement with your advertising man, you can turn down many objectionable advertising solicitors by simply referring them to your advertising agent who has exclusive charge of all your advertising. It is his business to inform them in a pleasant way, that " the appropriation for the present month is already exhausted and I have no doubt my client did not know this. Under the circumstances we will have to pass the opportunity by this time," or something to that effect. At any rate he will handle them in a way that you could not do so gracefully and his services would not cost you more than from $10.00 to $25.00 per month. If he is at all clever, he will save you this amount on poor advertising.

826. **Writing Advertisements.**—In writing advertisements there are a few essential points that should be considered:

827. *First,* take the natural desire which you have a right to expect the public to have already for photographs, and try to fan that desire into a very keen desire. Never start out by telling what you have to sell, but always talk from the view point of the customer. Then,

828. *Second,* show the customer just how the photographs you produce will help him to satisfy his desire; in other words, appeal to his common sense.

829. *Third,* say something to prove your statements, for the ordinary person thinks that the majority of adver-

PORTRAIT STUDY

STUDY NO. 37

H. SCHERVEE

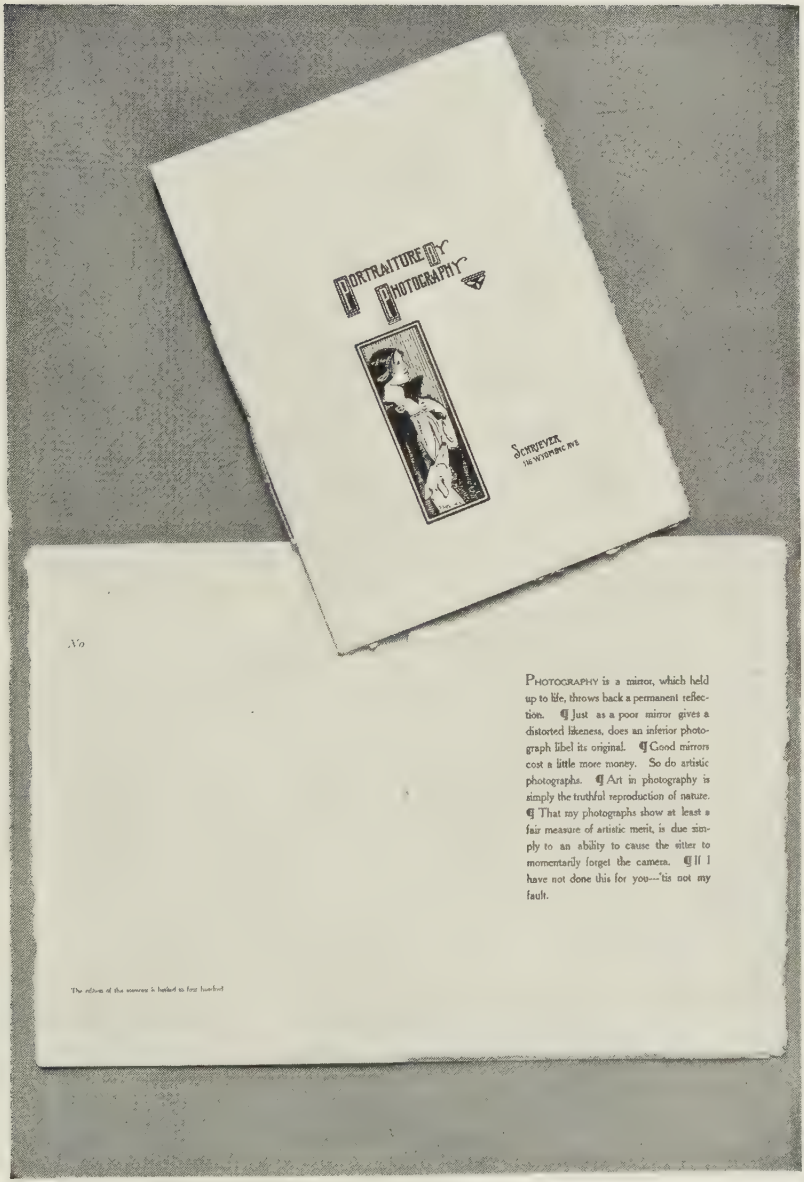

PORTRAITURE OR PHOTOGRAPHY
SCHREYER
No
PHOTOGRAPHY is a mirror, which held up to life, throws back a permanent reflection. ¶ Just as a poor mirror gives a distorted likeness, does an inferior photograph libel its original. ¶ Good mirrors cost a little more money. So do artistic photographs. ¶ Art in photography is simply the truthful reproduction of nature. ¶ That my photographs show at least a fair measure of artistic merit, is due simply to an ability to cause the sitter to momentarily forget the camera. ¶ If I have not done this for you---'tis not my fault.

Illustration No. 98
Section of Advertising Booklet
(Front Cover and First Two Inside Pages)
See Paragraph No. 833

tisers exaggerate, and proof is necessary to instill confidence in him.

830. *Fourth,* write your advertisements in that energetic, enthusiastic, forceful, friendly style, that will make the reader feel like coming to the studio immediately.

831. *Fifth,* state exactly what you want the reader to do. Many advertisers fail because when the reader has read the advertisement he is somewhat confused in regard to what he is expected to do, and so he puts the matter off and forgets all about it. There must be something specific, something that will enthuse the reader with a desire to come to your studio.

832. **Use of Booklets in Advertising.**—One of the most effective forms of advertising is the mailing of special neatly prepared circulars to a list of carefully selected addresses. The booklet should appeal directly to the reader and convey to him precisely the information you wish to give, and as it is complete in itself it avoids the possibility of being overlooked, as would be the case if you inserted a display advertisement in a newspaper where it would be swamped by a multitude of other similar announcements. By properly selecting your list of names, practically every copy should reach the actual person for whom it is intended. In addition to this, if you have prepared the booklet in an artistic and attractive manner it is very probable that it will not be thrown into the waste-paper basket, but will be kept where others besides the recipient will see it.

833. There is almost a limitless number of forms that may be attractive for the preparing of circular matter of this kind. In all circulars or booklets, however, it will add to the appearance to include at least one or two reproductions of your work. If the booklet is printed on rough paper your half-tones may be printed on regular calendared paper, and these trimmed and the upper edges pasted in proper reserved spaces in the booklet. On the other hand, if an enameled paper which will readily take half-tones is employed, it would be possible and advisable

to use three or four reproductions of your best work throughout the booklet. Under no circumstances should you have the pages crowded. Leave large margins and have the type of good size and style so that it will be perfectly readable. A booklet may be made any size. A very suitable size, and one that will give you plenty of white margin, can be made 5 x 7 inches, with not more than from eight to sixteen pages. We reproduce herewith illustrations of a booklet which will serve to offer suggestions. See Illustrations Nos. 98, 99, and 100.

834. In mailing out the booklet, a city or town directory may be employed and from this directory a list of names selected of the class of people you particularly desire to reach. Suitable envelopes should be provided for the booklet and the envelope should be sealed so as to be received as first-class mail. To use a cheap envelope or to mail it unsealed, requiring but a one-cent stamp, cheapens the undertaking and causes it to lose its value. When catering to good trade, circular envelopes are liable to find their way into the waste-basket, while if mailed under first-class postage, the extra expense amounts to nothing, as a few new sittings from such customers will many times pay for the extra postage and in fact for the entire printing of the booklet. Then, too, their patronage may be the means of bringing their friends, so on the whole, it is poor policy to cheapen a proposition in any way, even by using third-class postal rates.

A STUDIO OF CONVENIENCE

Located in the geographical center of town, yet cozily away from the vexations of the street---second floor. ¶ A private hall admits you to the Reception Room---commodious and comfortable. ¶ Here your preliminary arrangements are executed. You will not be disappointed if you expect the most courteous attention. The service was planned to conform with high degrees of intelligence. It does. ¶ The Art Room adjoins. Many have said kind words about its pictures and furnishings. It is yours as a resting place, if nothing more. Telephone. ¶ Dressing Rooms---properly equipped---all the name implies.

The two half tone reproductions of my Sepia-Tone Photographs, shown on this souvenir---one on this page---afford a faint idea of their rich softness of quality. ¶ Among my most discriminating patrons, they are exceedingly popular.

Of the nineteen prizes my exhibits have been awarded, at conventions in the art centers of civilization, the greater number were won by my drapery, costume and bridal portraits. ¶ My methods for securing the most pleasing arrangement of raiment, and blending softness of light and shade, are sought by the profession everywhere. Naturally, I may appear egotistical in exploiting the merits of these productions; but, I assure you, I am not entirely alone in my opinion of them.

PORTRAITS IN DRAWING

PORTRAIT ENLARGEMENTS

While large portraits, reproduced from favored photographs of subjects are executed by me, both in black and white---and colors; yet whenever possible, I recommend Sepia. ¶ The warm, soft tones of Sepia lend a charming life quality, unequaled by any other process. ¶ The prices for enlarged Sepia Portraits are naturally a little higher than for ordinary productions; yet the life-long satisfaction they give, more than compensates for the expenditure of a few extra dollars. ¶ My advice on framing large pictures, is at the free disposal of my patrons.

Illustration No. 99
Section of Advertising Booklet
(Third, Fourth, Fifth and Sixth Inside Pages)
See Paragraph No. 833

CHILDREN'S
PICTURES

I am called "the children's artist." ¶ I think the principle reason for my success in juvenile portraiture, is the fact that I love the little ones. Everyone should. Children instinctively warm to those who really like them. This common bond of sympathy puts them at ease. Before my camera they are children—not statues. ¶ I simply reproduce their childish naturalness, with the aid of some talent—and a perfect equipment.

PERTINENT POINTS...
PHOTOGRAPHIC

It is generally believed that bright, sunshiny weather is best for likeness making. This fallacy deters many intending sitters from utilizing cloudy days, which are by all means the best. The light is more easily controlled then, that's why. ¶ Many persons object to the exhibition of their finished portraits, by the artist. Some are even kept from having pictures made, because of this fear. Perfect privacy is a rule at the Gold Medal Studio, if you but intimate your desire. ¶ To business men I offer a service, without waits. An appointment for the sitting is advised. ¶ I do not calculate that a perusal of the remarks set down on these pages, will immediately influence your orders. Perchance they may cause you to inspect my exhibit, at the studio. Orders sometimes come that way.

A Style Two

PERSONAL
ATTENTION

All setups have my direct supervision or execution. The patron desiring cabinet photographs receives the same care-taking, individual service, as another paying for the most expensive portrait

Illustration No. 100
Section of Advertising Booklet
(Seventh, Eighth and Ninth Inside Pages)
See Paragraph No. 833

CHAPTER XLI.

Regulation of Prices.

835. The regulation of prices to be charged for different grades of work depends largely upon the class of trade you are catering to. Where exclusive trade is solicited, usually no pictures are made under $8.00 a dozen, and the pictures at this price are small or cabinet size, the prices on the larger sizes being made in proportion, often extending to $40.00 and $50.00 per dozen, and still higher. Studios doing a general photographic business, catering to the "masses," will very likely be called upon to supply work at from $4.00 per dozen upward, and many times a special picture at $3.00 is made. The prices asked for the highest grade must be determined by the quality of work you are capable of producing, and a great deal also depends upon the individuality of the photographer.

836. There are cases where a photographer can handle trade at $3.00 and trade paying as high as $25.00 per dozen, in the same studio. Such a studio must do good, clean work, regardless of grade, and the personality of the photographer has much to do with the successful sale of the high-priced work. In regulating the prices for such studios, a special picture mounted upon an exclusive mount is made for, say, $6.00 per dozen. This class of picture must be very good, and suitable for all classes of trade. It should be well finished and the picture mounted on a neat, solid mount, or even in a simple folder.

837. All grades less than $6.00 per dozen are usually mounted solid on some stock mount, the quality of the mount being determined by the price of the picture. The $4.00 and $5.00 styles should be good serviceable mounts,

of good stock, while if a $3.00 picture is made the stock in the mount is usually of light weight and cheaper quality. This grade of picture is seldom exhibited, and only when called for and a higher grade cannot be sold.

838. The grades over $6.00 are usually finished in platinum or carbon, and mounted in folders, or embossed in different ways. The styles of the folders, style of the print, and the general improvement of the appearance of the pictures regulate the price asked for them. The higher grade work should also be delivered in neatly provided boxes or cases in keeping with the class of work.

CHAPTER XLII.

Dealing With Competition.

839. If the proper means are employed it matters little how much competition one has. There is a way of making your work exclusive from all others, and if each photographer would apply similar methods to those which we will outline all would be able to obtain better prices and do a larger business.

840. When selecting mounts for your best work, or even for your moderate price work, do not select the regular stock mount, but have styles made expressly for your use. This works especially well where you make a special price picture and if this particular picture is meeting with favor with your trade you should have it mounted on a mount that cannot be procured by your competitors. If such a method is adopted it will not be long before each and every competitor will apply similar methods, each selecting an exclusive mount of his own, with the result that all can ask a higher price for the work, and there is no chance of comparison as to grades, by customers, for by the different styles of mounting the pictures appear entirely different, and the photographer can speak of them as original, and not as compared with his competitors' pictures of the same style.

841. This also gives an opportunity for the display of originality in the manner of putting up the work, and the photographer who uses the best judgment in his selection, in fact, he who turns out the best work, will receive the largest share of the patronage, to which he is well entitled.

842. In addition to the selection of a special style of

mount, each photographer should have a certain style of picture which is characteristic of his own work. This particular style should be out of the ordinary, for which he asks a good price, and it is also advisable to give this style of picture a name that is in keeping with the class of work—one that he can use in advertising—so that his customers will become so familiar with it that they will eventually call for that particular class of work.

PORTRAIT STUDY

STUDY NO. 38—See Page 582 R. H. KIMBALL

PORTRAIT STUDY

Study No. 39—See Page 583

L. Jamieson

CHAPTER XLIII.

Buying Supplies.

843. Unless very cautious in the purchasing of supplies, photographic mounts, etc., the photographer will find in a short time quite an accumulation of stock which is tying up money that he should have in the bank to use for discounting bills. Those who are established in business should, by experience, learn the quantities to purchase, yet it is surprising how little judgment is used by many experienced photographers in their purchasing of supplies, resulting in considerable loss during the year. The man who is just starting in business should buy cautiously and in small quantities, and after the first year's experience he will be able to judge more readily the class and style of materials to order.

844. **Chemicals.**—When buying chemicals never seek bargains, but buy the best and purest chemicals obtainable. Always purchase in sealed packages, and never in bulk or broken packages. It is best to buy in small quantities and buy often. Fresh goods are thereby ensured.

845. **Buying Paper.**—Sensitized papers are furnished in rolls and in cut sheets, and for professional use they are put up in gross and half-gross boxes. The cut sizes are the most convenient to handle for all sizes from cabinet to 8 x 10, inclusive; for larger size prints the paper should be purchased in rolls.

846. Where platinum paper is used in fairly large quantity it is best to purchase in rolls, and it is advisable to adopt one grade of surface of platinum paper. A medium rough surface will be found the most suitable for all around purposes. It is not good policy to purchase more paper

than you can consume during one month, and by limiting yourself in this way you will always have fresh paper, which will give you more uniform results.

847. **Buying Card Mounts.**—As styles of mountings are constantly changing, it is unsafe to buy anything but standard goods when purchasing in large quantities. While there is some advantage in having a variety of mounts, there is danger of overdoing it. A dozen different styles of mountings are sufficient for even the largest studios.

848. Your first order for new style mounts should not be large, for you do not know how the particular mount will appeal to your patrons. Where you find a certain style is meeting with favor stick to it and duplicate in safe quantities. A good rule to follow, and one that will assist in keeping down surplus card mounts, is, that whenever you purchase a new style mount make arrangements to close out some of your old styles that are not salable. This can be done by offering pictures mounted on them at a special reduced price. You will always find some bargain seekers, even in the photographic business, and you can very readily dispose of all old stock to this class of trade.

849. A close watch should be kept on the stock-room, never allowing stock to accumulate, and when you have a certain style of mounts that are not moving satisfactorily, place your sample pictures bearing these mounts in a place where you will have them ready at hand, and for the next few weeks put forth efforts to sell pictures mounted on these particular mounts, and very often the placing of an extremely attractive picture on such a mount will be the means of selling it more rapidly.

850. If, after all, such efforts have failed, then a bargain price may be employed and offered to the class of customers who are seeking just such bargains, and by some means such as above outlined, you can keep your card supply from becoming stale, and never have any but salable mounts on hand.

851. We do not infer by the above remarks that you

should purchase so sparingly that you cannot fill orders promptly. Such is not our meaning, but exercise your best judgment in this matter, and whenever selecting any particular mount determine the kind of picture you will mount on it, and the price you expect to get for such pictures; then estimate (judging from your past experience) about how much of that stock you may be able to use for pictures at that price. Working upon this basis you can determine quite accurately the amount of goods to order.

CHILD PORTRAIT STUDY

Study No. 40—See Page 583 George J. Parrot

CHILD PORTRAIT STUDY

STUDY No. 41—See Page 583 GEORGE J. PARROT

CHAPTER XLIV.

Card Filing System for Photographers.

By L. D. Stocking, of the Shaw-Walker Co., Muskegon, Mich.

852. **Keeping a Record of Work.**—Few people realize how much detail work most photographers really have to contend with. It is not the mere making of the pictures and getting the money for the work. A complete record of every negative exposed and every print made must be filed somewhere, somehow, in order that ready reference can be made to it at any future time.

853. The cards shown below are especially designed for taking care of the detail work of filing negatives, showing what to base the price of re-orders upon, etc.

854. The card shown in Illustration No. 101 is intended more particularly for portrait work, viewing, interiors, etc.

855. The first two lines—name, address—are for the person ordering the photographs. In the upper right-hand corner should be the number of the negative or negatives; *i. e.*, if more than one negative is used the series should be given a number, and this number placed in the blank space on the card. The envelope or box in which the negatives are filed should bear the same number. The card, for example, may be made out for James Brown, and show the number " 5," meaning negative (or negatives) No. 5 belongs to James Brown.

856. This card shows an accurate account of the whole deal from start to finish, and is invaluable to any photographer.

857. **For Commercial Photography.**—The card shown

in Illustration No. 102 is designed more especially for commercial photography. This branch of the art is coming more and more into practical use every day, and every

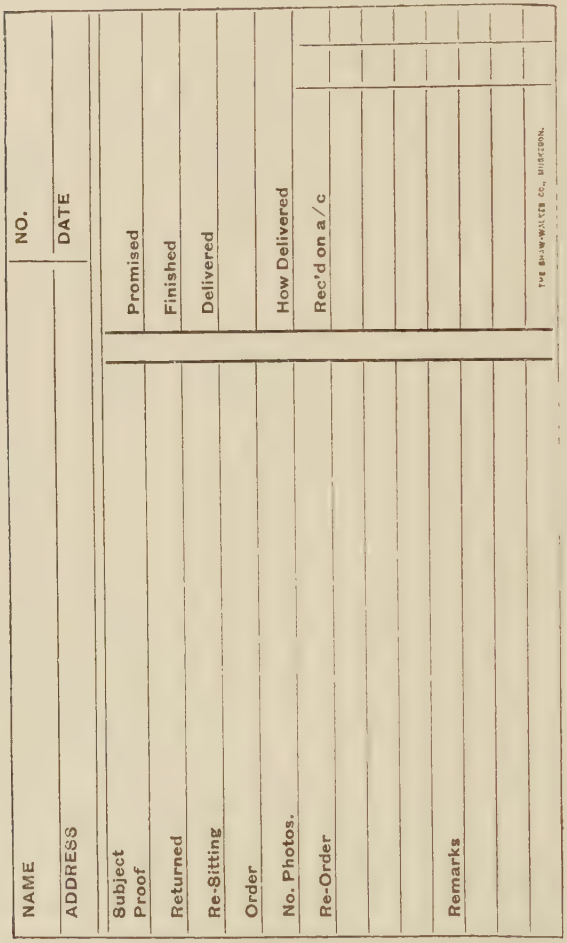


Illustration No. 101
Shaw-Walker Filing Card for Studio Records
See Paragraph No. 854

photographer should have a set of these cards on which to record all business done.

858. A record card for commercial work must neces-

sarily be made out with more blank spaces, as there are many more points to be cared for—more detail.

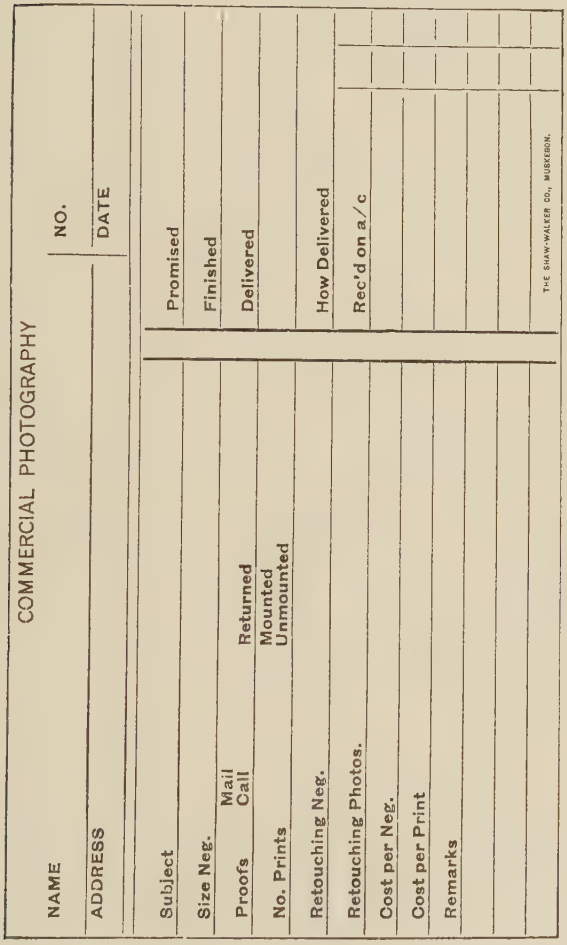


Illustration No. 102
Shaw-Walker Filing Card for Commercial Work
See Paragraph No. 857

859. As a rule commercial photographs are used by manufacturers for displaying their products. The pictures are used for reproduction—making cuts or engravings.

860. This card is made out at the head the same as No. 101, and the sub-headings care for all detail.

861. Photographs of this kind are sometimes left unmounted, and then, too, negatives and prints are charged separately. The size of the negatives is also an important factor, *e. g.*, an 8 x 10 negative may be made and a print of only 4 x 5 made from it, showing only a portion of the original picture.

862. Most photographs must be retouched—the indistinct parts brought out clearly. This work is generally done by the engraver, but card No. 102 has a space for charging this class of work, it sometimes being left to the photographer.

863. The indexing of negatives is done the same here as with card Number 101, the upper right-hand corner bearing the number placed on the negative.

864. It is quite necessary to have a cabinet for containing these cards; therefore, one is made having a capacity of 1200 cards (all cards are 3 x 5 inches). Each cabinet is fitted with a follower block, in order that all cards may always be held in an upright position, whether the drawer be filled or only contains a few cards.

865. A set of alphabetical guides should be used, and each card filed alphabetically, so any customer's card can be referred to within a few seconds.

CHAPTER XLV.

Equipping a Photographic Studio.

866. **Introduction.**—In supplying information regarding the equipping of a photographic studio, we will deal with studios doing a general photographic business only, for when the photographer becomes thoroughly capable of conducting a studio of this kind, should he desire to go into special work, or equip a studio specially for a certain class of work, he will, by past experience, learn exactly what is required. Circumstances have so much to do with the proper equipping of such studios, that much will depend upon these circumstances, and usually the success of such studios depend largely upon the personality of the man behind the gun.

867. For a general photographic business, too much care and attention cannot be given to the proper equipping of a studio, from the reception-room to the finishing-room. Each and every department should receive special consideration. It is not necessary to invest a large sum of money in furniture and fixtures—simplicity and neatness are the essentials. If proper care is exercised in selecting the furnishings very pleasing effects may be produced with little expense. One must use judgment at all times, and it is advisable to secure articles which are serviceable and which may be used in the skylight-room as accessories when desired.

868. As each room in a studio needs particular attention, we will consider them separately, keeping in mind a studio of the average type, such as is found both in the smaller as well as the larger cities. With alterations to suit conditions these suggestions will prove applicable

to any and all studios, for the principles are the same, no matter whether you are conducting a business the gross income of which is $200 or $2000 a month.

869. **Reception-Room.**—The up-to-date photographer cannot spend too much thought on his reception-room. From a business point of view it is the most important part of the establishment. It is here that the prospective sitter obtains his first impression, which might not actually lead to the making or marring of an appointment, or even the making of sittings, yet frequently it has great bearing upon the spirit in which the proofs are received. The tastefully arranged reception-room will give the customer a reassuring impression of the success of your business, and will lead to a more confident order. A slovenly room will make the sitter doubt the ability of the photographer and lay the germs of misgiving, which may tinge all further transactions, leading, if not to dislike of the proofs, to a very guarded order.

870. A reception-room may be plain in its furnishings, and one need not go to any excessive expense in fitting up such a room. Moreover, good examples of your work, tastefully displayed, tell their own story, and orders for more expensive work than that otherwise intended should result.

871. The reception-room should be made as cheerful and home-like as possible, so that the customer feels at ease immediately upon entering. Avoid a shop-like arrangement. Nothing out of the ordinary in the way of decoration is required. Avoid gaudy furniture. On the other hand it should be solid, substantial and good. Mission furniture is an excellent style to employ and it is not much more expensive than other forms. When certain styles of furniture are adopted these styles should be carried throughout the studio. While ordinarily in furnishing a room we would use all one style of furniture for each room, yet for a studio this is not necessary. Styles of furniture which harmonize well together may be used. For example, mission and gold furniture or mahogany and

"DREAMING"

Study No. 42—See Page 584 Joseph Thibault

FATHER AND CHILDREN

Study No. 43 — Homeier & Clark

gold make good combinations. It is not advisable to use heavily upholstered furniture in the same room with mission or any hard wood furnishings.

872. In the larger studios, and whenever possible, it is advisable to have an art display room, in addition to the reception-room. In this latter room one may have arranged on the walls various framed pictures and the suggestions which follow, regarding the reception-room proper, may be carried out to some extent in the art display room only on a broader scale.

873. **Color Combinations for Walls.**—The first consideration for either of these rooms should be the color of the walls. They should be plain and not fussy and a color should be selected which is easy to the eye and at the same time will give the best effect to the pictures displayed. Tinted walls are preferable, but in case they cannot be tinted they may be covered with some plain material. Ingrain paper would be very suitable owing to its entire lack of figures or designs.

874. Before attempting to furnish a room one should decide on a color scheme, and it is a very good rule to select two prevailing colors and hold to them, introducing as little as possible of any other tint. Brown and green make a very good combination, so do brown and cream. Green and red is a splendid combination when dark shades are used. Light colors are not satisfactory for a reception or display room, for the wall-covering should be quite dark and unobstructive so that there will be no detraction from the picture. When choosing a wall-covering, therefore, you must bear in mind that it is chosen for its value as a background for pictures, rather than for its own inherent beauty.

875. Dark green burlap also makes an excellent wall covering. Or, if one does not care to go to the expense of using either ingrain paper or the burlap, a muresco or a similar colored wash or sizing may be applied to the plaster. If, however, the walls are not plastered, but covered with wood, it will be necessary to tack on cheesecloth

before papering. If burlap is used it can be fastened directly to the wood. If the walls are to be stained on the wood it will be advisable to paint them with a paint that will produce a dull, velvety surface. Any of the colors or combinations suggested above will be suitable for wooden walls. Where the walls are of a dark color, the ceiling and perhaps the border above the picture moulding should be of a cream color, for this will assist in evenly illuminating the room.

876. **Harmonizing and Appropriate Colors for the Floor.**—If it is possible to have a hardwood floor use one large rug and perhaps a few small ones. The advantage of rugs is that they are easily removed and cleaned. The colors of the rugs should harmonize with the general color scheme of the room, and it is better to have as small a figure in the rug as is obtainable. It will be more effective if the pattern is of a Persian design made up of small figures. Rugs containing figures of flowers should never be used.

877. Avoid heavy draperies or any excess material hanging or laying about, which will catch the dust and dirt. This is especially objectionable for windows, as draperies prevent the light from entering the room.

878. **Display of Photographs.**—A good library table may be provided for showing large mounted prints. A counter and show-case are not recommended, as they are very obtrusive and carry with them the idea of commercialism, which is not a desirable feature.

879. For cabinet size pictures mounted on solid cards, a swinging wall bracket may be employed, containing from four to eight panels, each panel being devoted to a certain style of picture and a different style mount. The style and size of the mount, as well as the print, regulate the different prices.

880. Pictures may also be placed in large folios, which latter should be bound with flexible leather covers. These portfolios are best made of plain black leather. Avoid using the highly ornamental or gorgeous kind. Never have

pictures lying about loosely, for continual handling soon soils them and soiled pictures should never be used for samples. A drawer in the library table, or a shelf underneath, is useful for holding the various albums. The albums should be classified, devoting one to pictures of men, another to ladies, one to children, and still another to three-quarter length figures, etc.

881. The prospective customers may have very definite ideas as to the position, etc., in which they desire to be posed, before entering the studio, so that the reception-room lady may save a great deal of time, after ascertaining the requirements of the individual, by turning to the proper folio and showing the customer samples of work that have been finished for other customers along the same line.

882. Pictures hanging on the walls should not be crowded. A limited number of good specimens have an effect quite different from the general tone conveyed by over-crowded walls where a multitude of specimens, varying in quality, defeat the ends of the photographer, who, by his exhibits, expects to convey an adequate idea of the class of work done. Where one possesses a large variety of excellent specimens they may be arranged in groups. For instance, small sizes may be grouped together in a section by themselves, other sizes and styles may be grouped in another section, etc. This will give the desired impression of the care that is taken with all work of the studio.

883. At one corner of the room have a desk, where all orders are to be taken and delivered. Back of this should be a cabinet of pigeon holes, in which are placed, alphabetically, pictures that are finished ready for delivery.

884. In one of the darker corners of the room, where pictures hung on the wall would not be displayed to good advantage, on account of the lack of light, you may construct a little canopy or cozy-corner, consisting of a wooden chest upholstered and covered with a canopy of Turkish goods. This will add very materially to the general appearance of the room. Where one has an art display room in addition to the reception-room, it would be more appropriate to have the cozy-corner in the art room.

885. It is of vital importance that the reception-room, as well as all rooms in the studio, be kept neat and clean. The reception-room, especially, should be dusted at least once a day, using a soft cloth. Never use a feather duster. Smoking should be prohibited in any part of the studio, whether it be the reception-room or the work-room, for certain customers may object to the odor of tobacco and become offended.

886. **Dressing-Rooms.**—If possible, it is advisable to have two dressing-rooms located convenient to the skylight-room—one for the ladies and the other for gentlemen. Special care should be taken when furnishing these. In the ladies' room there should be a low dressing table, with a large mirror; and one or two chairs is sufficient. These furnishings should be of neat design, and, of course, in one style. Bird's-eye maple or quartered oak are always pleasing to the eye.

887. The dressing-table may contain a powder-box and puff, a comb and brush (which should be kept perfectly clean), a curling-iron, a pin-cushion containing a variety of pins, etc.

888. If you have hardwood floors use rugs, otherwise the floors should be neatly carpeted.

889. The gentlemen's dressing-room may be furnished practically the same, only the furniture should be larger and stronger. A few framed pictures on the wall would not be out of place. Off from each dressing-room should be a lavatory.

890. **Studio or Skylight-Room.**—Next in importance to the reception-room, but most important of the work-rooms, is the skylight-room. It is often the case that the excellent impression of the establishment and of the work produced which is created in the reception-room, is considerably discounted when the customer enters the skylight-room, where the portrait is to be taken. If the same neat appearance is not carried throughout the studio, the customer may have some misgivings as to whether the pic-

tures shown in the reception-room could possibly be produced in such a place and amid such surroundings. In a case of this kind the sitter's confidence will at once be shaken, and this may have its effect on the expression. It is true that people who frequently have their portraits taken have become somewhat accustomed to this, but it is not so with those who visit the photographer less frequently. With this latter class first impressions often go a long way. Even with the more accustomed ones, if they were introduced into a studio where everything was neat and tidy they would naturally be favorably impressed and have additional confidence in the work to be done.

891. The shades on the skylight and the diffusing curtains should be kept clean. There is no excuse for their being covered with dirt and cobwebs, and the photographer who has any interest at all in his business will not permit these to exist. Faded, worn, and sometimes dirty, carpets and rugs are frequently an eyesore. It is quite true that these may look all right in the finished picture, but when sitters are invited to pose on them they cannot fail to notice their condition, which is likely very different from what they would endure in their own homes.

892. Corners of the skylight-room should not be used to store worn-out apparatus or unused material, for if so used they will soon be corners for gathering all kinds of rubbish and dirt, which is to be absolutely condemned. Do not have any more furnishings in this room than you actually need, and under no circumstances allow it to become a store-room. When a background or a piece of furniture becomes old, discard it altogether, or at least remove it from the skylight-room.

893. In addition to the camera and stand, you may have a couple of headgrounds—one light or medium and one dark; two large grounds for full or three-quarter length figures, etc.,—one for exterior and one interior— and also a background for group work. This latter ground, however, may be painted on the end wall of the studio, and by car-

rying the design around on to the side walls it will be possible to make a much larger group than if a stock background were employed.

894. A revolving chair for bust pictures, which may be adjusted to various heights, and admit of the subject being turned from one side to another without rising from the chair, should be provided. A very simple chair will be seen in Illustration No. 7. In addition to the posing chair, one should have at least one or two head-rests, a reflecting screen, a diffusing screen and a head screen. See Illustrations Nos. 2, 3, and 6 of these different articles.

895. When selecting the furniture for the reception-room, as previously stated, select such pieces that you can use in posing subjects. This is an important item, as it will permit of your having a larger variety of accessories and enable you to photograph your subjects with different surroundings, and thus you get away from a stereotyped form of working.

896. All apparatus in the skylight room should be kept neat in appearance. Frequently the camera stands should be polished, as well as the woodwork on the camera, and lenses after long use may be relacquered. Although the instruments may produce exactly as good results in their worn condition, yet they do not give the same confidence to the customer as if they were in keeping with other surroundings.

897. The unsightly appearance of many things in the studio are not so apparent to the photographer himself as to his customers, particularly on their first visit. With the photographer the change from the new material to its present condition has been so gradual that it has been entirely unnoticeable, but one should always strive to see things from the standpoint of the customer.

898. It is a good plan to provide a small wall cabinet with lock and key, in which you may place your lenses to keep them free from dust.

899. If the floor is of hardwood, it should be wiped with a damp cloth every day. A good time is at the close

CHILD PORTRAIT STUDY

STUDY NO. 44

J. E. MOCK

CHILD PORTRAIT STUDIES

Study No. 45

E. B. Core

of the day's business. All curtains, backgrounds, accessories, etc., should be dusted regularly. Above all, keep the room neat and clean. On account of the glass in the skylight, heat will be attracted and, therefore, the room should be well ventilated, for heat in an unventilated room is almost unbearable, and under these conditions one cannot expect to secure satisfactory expressions of the sitter, to say nothing of one's discomfort while working.

900. If there are other windows besides the skylight in the room they should be kept open to admit all fresh air possible. In extremely hot weather, when the skylight room is not actually in use, it is advisable to draw the shades to subdue the light, as subdued light has a tendency to cool off the room.

901. Plants arranged about the skylight and other parts of the room always give a cool appearance and add much toward beautifying the usually uninteresting appearance of the skylight room.

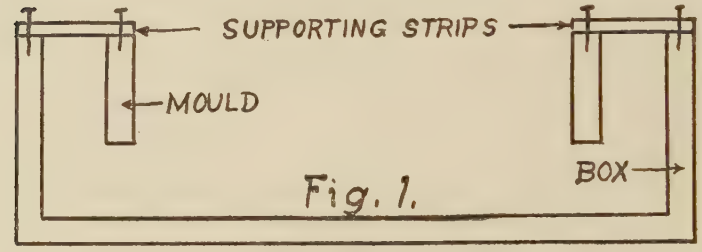
902. **Dark-Room.**—As considerable of one's time is spent in the dark-room, this room should be made as comfortable and convenient as possible and should not be made a store room, as is frequently done. It is advisable to have it fairly large in size. It should be well ventilated, so that it will never become damp, which often occurs, due to dripping plates and water spattered on the floor, etc.

903. When possible, have a window that opens outdoors. Arrange this so it may be closed tightly by means of a shutter, thus excluding all daylight. When the dark-room is not in use open this window, and also the dark-room doors, admitting all the fresh air possible, which will help to dry out all dampness in the room and make it more healthful. Entrance to the dark-room should be made through double doors, if possible, so that one may go in or out without endangering and fogging the plates that may be in the process of development. An L-shaped entrance may be provided, if the double doors are not desired or if it is not convenient to have them.

904. The sinks should be of good size, so that large

developing trays may be used, thereby enabling you to develop a number of plates at a time. The sink should also accommodate the fixing and washing boxes. Do not have too many shelves, as they only make it possible to accumulate many things in the dark-room that should not be there. Have a cupboard for plates, and a light-tight box or boxes for exposed plates. An ideal dark-room, together with its detailed description, is given in Volume II.

905. **A Cement Sink.**—A cement sink, as used and described by Mr. A. B. Stebbins, will be found both economical and serviceable for the small studio, or in fact for any studio, however pretentious.



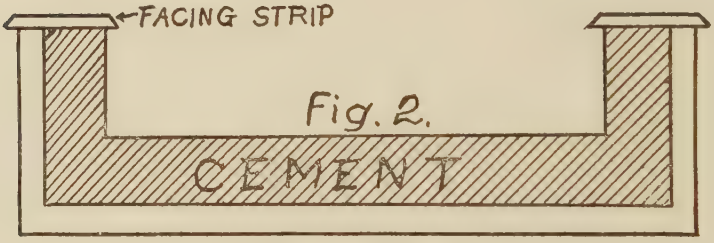


Illustration No. 103
Diagrams of Cement Sink
See Paragraph No. 908

906. The advantages of a cement sink for photographic use are cleanliness, cheapness and absolute security against leakage. If you follow the directions you can make one that will be a luxury compared with the ordinary wooden sink, and at a trifling cost in cash and labor. The

most important point is a good foundation; that is, a solid box so supported that there will be no settling or spring. Make your box four inches wider and two inches deeper than you want the inside dimensions of the sink; use good one inch lumber (it can be cheap, but should be sound; rough hemlock is all right); have it well nailed together; put it in the place used, and have the drain pipe well fitted at this stage.

907. It is recommended that the cement bottom be two inches thick; so run the pipe through the box one and three-quarters of an inch, so as to let the cement set around it, which will hold it tighter than if it were screwed in. See that it is fixed in the right place and stop it with a cork. It will be a good plan to put a union just below the sink, if you are at all likely to want to disconnect it at any time.

908. The cross section, Illustration No. 103, Figure 1, shows the box ready to be filled. You will see that all the pattern or mould needed is a wooden frame four inches less in width, two inches less in height (outside measurement) than your box. It is supported even with the top of the box by narrow strips tacked on so as to hold it in place equi-distant from the sides and two inches from the bottom; these strips are indicated in Figure 1, Illustration No. 103.

909. Now get your mason and have him put in the cement. Tell him to handle it dryer than he would for cement walks, as it will drip through some (no need of any tight joints in the box). Let it set from two to three hours, when you can pull the mould away and it is ready for troweling. Now let it set over night and it will be ready for use in the morning.

910. Get the best Portland cement, and good, clean sand. One-half barrel of cement and three bushels of sand will make a sink 3 x 7 feet inside. I use three parts of sand, two parts cement. If you have any confidence in your mason let him decide these points. I have put two such sinks in my work-rooms; got things ready; had the mason fill the moulds between five and six p. m.; they were ready

to trowel between nine and ten p. m., and were in use next morning.

911. To finish the sink put a facing of planed lumber around the top indicated in Figure 2 and let it project one-fourth of an inch inside (this is to protect the edges). I also use a planed piece of wood in the front of the box. A coat of paint gives it the finishing touch. If you think it necessary you can reinforce the sides, corners and bottom of the sink by putting big nails or spikes in the cement. Have these completely buried and they will not rust. Heavy wires can be run in through the bottom, but if you have a solid box, good cement and clean sand, these are not essential.

912. None of the chemicals used in ordinary work will affect such a sink except strong acids. It does not absorb and retain moisture or odors; developers do not stain it, and it can be scrubbed out as you would scrub a stone sink, and it grows harder and more permanent as the years go by.

913. The cost will depend on local conditions. Cement cost me $1.75 per barrel, sand ten cents per bushel. One sink was put inside of an old wooden one, the box for the other I made out of picked up stuff. The mason will charge from fifty cents to a dollar for his work.

914. **Apparatus and Materials for Use in the Dark-Room.**—In addition to the washing and fixing boxes, which should be large enough to accommodate the standard size plates that you are using, one should have a number of trays. Where a large business is being done and a number of plates developed at one time, a large tray holding eight to ten 5 x 7 plates will prove a convenience. A tray 21 x 26 inches in size will accommodate thirteen 5 x 7 plates and will be found very convenient where a large number of plates are to be developed. This tray should be of rubber, as it is more lasting than any other material and much easier to keep clean. A couple of 8 x 10 trays will be found convenient for various manipulations during development, and one or two 5 x 7 trays should also be provided. These

latter may be used for intensifying and reducing, and each one should be labeled and kept for its particular purpose.

915. A minim graduate, an 8-ounce graduate, and a 16 or 32-ounce graduate will be necessary, also a large pitcher in which to mix the developing solutions. A four or six-gallon earthen jar, with a cover of similar material, or a wooden cover (never tin or iron), should be kept on one corner of the sink for the saturated solution of hypo. By having this saturated solution always on hand you will never be required to wait to dissolve hypo when you are in a hurry to mix up a fixing bath, or when the bath may have become exhausted without your noticing it until you are either developing some plates or just ready to develop.

916. If you have not a ruby lamp built in the wall, or as described in Volume II, in the plans for a studio dark-room, you should have a good dark-room lamp that will not smoke. If electricity is available it will be found the best source of illumination, as it does not require any ventilation, and the light may be easily turned on and off by means of a switch.

917. One or two large negative racks should be provided, in which to place the negatives after they have been thoroughly washed. An electric or water fan should form a part of the dark-room equipment, as negatives can be dried very quickly when fanned. Then, too, in warm weather the fan will stir up the air in the dark-room and make it much more comfortable to work in. Yet if a good system of ventilation has been installed one should not suffer from the heat, unless the dark-room is near the roof, where it receives heat caused by the direct rays of the sun.

918. **Retouching-Room.**—A department for retouching may be provided. Many times, however, the retoucher has a desk in the reception-room or the skylight-room, or in the finishing-room. For the larger studios, where it is necessary to have a number of retouchers, it will be found more convenient to have a special room fitted with good light especially for retouching. It is better to have a north light by which to work, as this will provide a more uniform

illumination. However, a window facing any direction may answer the purpose, if it is properly screened with tissue paper, or if of ground-glass instead of plain glass.

919. The retouching desk and the materials mentioned in Volume X —Retouching, Etching and Modeling— should be provided. The essentials are: A retouching desk,

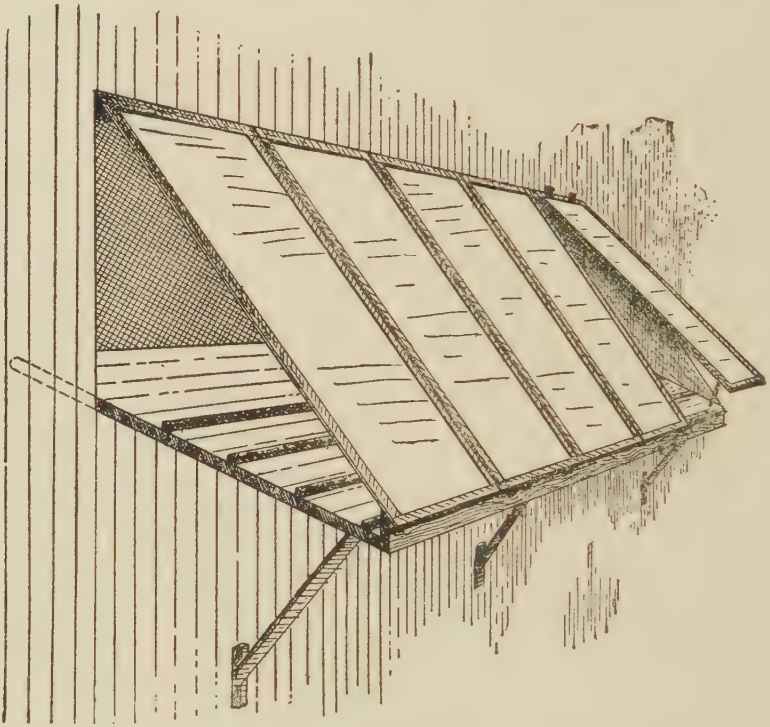


Illustration No. 104
Diagram of Printing Light
See Paragraph No. 921

a lead holder, and leads of different hardness from BB to HHH, an etching knife, spotting brush, stump, cake of opaque, retouching fluid, retouching varnish and etching paste.

920. **Printing-Room.**—Notwithstanding the fact that gaslight and developing papers are used to a great extent

in many studios, a regular daylight printing-room should be provided, with its printing light, for it will be often necessary to finish on printing-out papers. Platinums, carbons, etc., will possibly have to be made and then a regular printing-room will be a necessity. If one intends to use developing papers exclusively, it will not be necessary to have a daylight printing-room, as a part of the dark-room may be employed as a printing-room for developing papers or a small room may be especially arranged for this work.

921. The daylight printing-room for printing-out papers should be clean, and only contain such articles as are necessary for making prints. Circumstances have much to do with the arrangement of a printing-room. An unobstructed printing-room with two printing windows, one facing east and the other south, will permit of printing at any hour of the day. As it is seldom one can have two windows owing to obstructions, a room may be arranged which need not be wide but should be quite long, and on the long side have the printing window. A very convenient window and one which will give you full benefit of all the light may be constructed as shown in Illustration No. 104. This printing light slants at an angle of about 60 degrees, and the shelf underneath this light also slants at an angle of about 35 degrees from the horizontal.

922. Ground-glass should be used, of course, in order to supply an even diffused light. If you are unable to secure ground-glass for your printing light, plain glass may be substituted, but this should be covered on the inside with tissue paper, or by using tracing cloth you have practically the same effect as if ground-glass were used and if this cloth is tacked to spring rollers attached to the top of the window, the curtain may be lowered at will. In cloudy weather you have full use of the plain glass. The printing-shelf should be about three feet deep and long enough to fulfill your requirements, or as long as circumstances will permit your building and give you a sufficient amount of printing space. The frames, when printing, are laid flat on this shelf, which is the bed of the window,

small cleats holding them in place, as shown in the illustration, and preventing them from sliding on to other frames. The printing window should be of a convenient height, say about three feet from the floor.

923. At the end of the printing-room should be a table on which to load and unload the frames. Above this table should be arranged shelves to hold small negatives both before and after printing. It is advisable to have this section of the room partitioned or curtained off from the balance of the room, in order that prints will not be flashed when loading and unloading the frames. A large shelf may be arranged over the printing window to hold large-sized negatives and a space may be shelved under the printing window to hold unused printing-frames. Two boxes should be provided, with hinged covers, one for storing the fresh unprinted paper, the other box for the prints as they are taken from the printing frames.

924. Ventilation of some kind should be provided for, and at least one of the sections in the printing light should be so arranged that it can be raised or removed. Not only will this provide for ventilation, to a certain extent, but will also enable you to print in direct sunlight, if you so desire. Ventilators should also be placed near the ceiling, for the printing-room is very likely to become quite warm, and as the hot air rises it will escape through these top ventilators. If one of the windows in the printing light is not open, then some other means for the entrance of fresh air should be provided. A small window at the end of the printing-room will answer very nicely.

925. For the average studio, using printing-out paper, it will be necessary for printing from small cabinet work, to have from 50 to 100 printing-frames the size of the negatives used for cabinet work, which is usually 5 x 7 size. In addition to this, one should have six or eight 8 x 10 frames, also one or two frames the size of the largest plate made. The number of frames as well as the sizes will depend upon the size of negatives you use and the quantity of work produced. The 8 x 10 frames will be a necessity,

CHILD PORTRAIT STUDY

STUDY NO. 46 GEO. B. SPERRY

CHILD PORTRAIT STUDY

STUDY No. 47—See Page 584

F. A. RINEHART

as one will desire to vignette prints many times and print a cabinet or 5 x 7 head on an 8 x 10 sheet of paper and for this purpose one should also have on hand a number of pieces of clean 8 x 10 plain glass to place in the frames to support smaller size negatives.

926. It is important to keep the printing-room clean. It should be carefully mopped or swept each day with a damp broom, and dusted with a dampened cloth, the printing light, shelves, etc., being carefully wiped. A dusty, dirty printing-room will give you all kinds of trouble and is the cause of more or less spots, etc., on prints, all of which may be avoided.

927. In large studios a special stock-book may be kept in which to enter the amount and kind of paper used each day. There should be little or no waste of material in any department, and if a careful record be kept, you will know instantly how much paper was used in filling the orders. At the end of the week or the end of the month you can check up the total amount of paper used, which should correspond to the number of orders turned out for the same period of time, making due allowance for a slight waste. An expert printer, however, will not find it necessary to make thirteen pictures when a dozen is ordered. *Each print made should count.* An extra print made when filling each order will amount to considerable in the course of a year. By this we do not infer that poor prints should be delivered, but by this system you train your printer to work more carefully and he thereby avoids waste of material.

928. **Finishing Department.**—Where it is possible, it is advisable to have one room expressly for toning, and another one for the general finishing, such as mounting, spotting, etc., and a portion of this latter room may be set apart for storing mounts, etc., if it is not possible to have a special room for this purpose. In smaller studios, however, it is customary to have the toning and finishing rooms combined in one, but a small stock-room is usually

by itself, and in this stock-room are kept all mounts and other material which are not needed for immediate use.

929. In describing the different phases of this department, we will consider each room separately. Then if it is your desire to combine them you may easily do so and have everything arranged to your own convenience.

930. **Toning-Room.**—The toning-room should be provided with good light, in order that one may judge the tone of the print accurately. A large sink should extend the full length of one side of the room; one about 3½ feet wide and at least 8 inches deep will be very convenient. Underneath this sink arrange shelves, which should hold your trays. The hypo tray should be kept entirely separate from the washing and toning trays. A very good plan is to keep your hypo tray on the bottom shelf. Allow no chemicals, other than those that are employed in toning, to be used on or emptied into this sink. If you follow this plan you will lessen the danger of staining prints.

931. A table should be provided on which to tone, and its location in the room will be entirely arbitrary. Much will depend upon the location of the source of light, for it should be in such a position as to enable you to see the tone to the best advantage, without there being any danger of fogging or flashing the paper while it is going through the various baths. The table should, however, be placed convenient to the sink.

932. It is an excellent plan to have a cupboard at one end of the room and out of the way, in which to place your chemicals and solutions, the lower portion of which may be reserved for your hypo either in the barrel or in small quantities. This will prevent any of the dust from the hypo floating about the room and settling on your trays or prints. Another cupboard may be provided over your sink, in which to keep the toning baths and all toning chemicals. A shelf directly above the sink will be found very convenient, for on it may be kept the graduates, hydrometer, etc.

933. It will be necessary to have at least six trays for the handling of printing-out papers alone. A tray will be

required for preliminary washing, one for gold toning, one for platinum toning, one for intermediate washing, another for fixing, and still a sixth tray for final washing. The toning trays should be, preferably, of rubber, while the other trays can be of wood, lined with oilcloth. The method of constructing these is described in the Printing and Finishing Volume (Volume IV).

934. For platinum developing one should be provided with a good quality porcelain or rubber tray, except for W. & C. Sepia paper, with which you require a hot bath and, therefore, will need a porcelain tray or some earthenware which will stand the heat. Tin, metal or iron trays will *not* do. The acid baths can be handled in rubber or oilcloth-lined trays. Each tray should be labeled and used for one particular purpose only, and if any other papers are desired to be toned or developed, other trays should be obtained. It is by this careful, methodical method of working that one will secure the best results and meet with the fewest number of failures. The cost of additional trays will be compensated for by the saving of material, to say nothing of the disappointments which would result if one should fail entirely with a batch of prints.

935. In addition to the trays, provide yourself with a minim graduate, an 8-ounce graduate, and a 32-ounce graduate; also a thermometer, and a hydrometer, a good pair of scales with accurate weights, blue and red litmus paper, the necessary chemicals for the various baths for printing-out papers, platinum papers, etc.

936. Some method of heating water should be provided. If you have access to gas, a one-burner gas stove will be very convenient, as well as inexpensive. A small oil stove may be employed, yet it is not advisable to have it in the toning-room, if it is possible to secure any other method of heating. When used, the greatest of care must be exercised to keep it perfectly clean, and never allow it to smoke, for the oil soot is very liable to lead to trouble, and if the lamp smokes, this soot will fly about the room and settle where it will do considerable damage.

937. **Finishing-Room.**—This room should be kept neat and dry, and provided with a good solid work table or bench, as well as with shelves and cabinets in which to store the mounts. If you have a regular stock-room, it will not be necessary to devote as much space in the finishing-room to shelves and cabinets, yet it will be advisable to have a certain number of these in which to place the stock for immediate use.

938. The cabinet should contain drawers large enough in size to hold the largest sheets of mounting board, and another large drawer should be reserved for the large finished prints, as it will be necessary to keep them protected from dust until they are sent to the reception-room for delivery. All card mounts should be protected in some way or other from the dust, and as these are usually purchased in regular boxes, they should be kept in these boxes until they are to be used, and in this condition may be placed on shelves.

939. Each kind of mount should be kept by itself at all times, and a perfect system inaugurated in the room so that you may instantly lay your hand on whatever material you wish to use, without having to look in a half dozen different places before finding it.

940. When a large business is conducted, a stock-book should be provided, where, on the left-hand page, is listed all of the mounts and other stock which is in this room, allowing one page for each class of material. Whenever anything is taken from the room, it should be recorded in the book on the right-hand page. In this way it will be an easy matter at any time to strike a balance and ascertain how much stock you have on hand, thus enabling you to replenish before your supply is completely exhausted, and it also supplies a check on dead stock.

941. Underneath the mounting table may be provided a couple of drawers reserved for mounting utensils, such as paste brush, paste bowl, print roller, mounting board, etc., while another drawer should be reserved for spotting colors, inks, spotting brushes, etc.

CHILD PORTRAIT STUDY

STUDY No. 48

B. FRANK MOORE

CHILD PORTRAIT STUDY

STUDY No. 49—See Page 584

W. G. THUSS

942. Among the essential materials that one should have in this room are a burnisher for flattening prints, an embossing press for placing your name on the mounts, a large trimming board sufficiently heavy to cut cards, a flat squeegee, a roller squeegee, a beveler for beveling the edge of the mounts, an embossing tool for embossing thin mounts, a hard rubber-set paste brush, paste bowl, mounting board, oval and square forms for trimming, trimming wheels, trimming holders, spotting colors, India ink, spotting brushes, etc.

943. There should be one or two windows in the finishing-room, one in particular to give light for spotting. If you use a burnisher this may be placed on a separate table, and when not in use it should be covered, in order to keep it free from dust.

944. Like all other rooms of a studio, this one should be kept clean; the work bench and shelves carefully dusted, and the floor mopped at least once a week. In dusting always use a dampened cloth. You cannot be too careful about cleanliness in this department.

945. The prints should be spotted here, and when leaving the finishing-room they ought to be ready to deliver to the customer. Any ruined or spoiled print should be checked and placed in what is known as " shorts " and these are returned to the printing-room, so that the printer will know just what is necessary to make over to complete the orders.

CHAPTER XLVI.

Hanging Pictures.

946. The proper hanging of pictures is a problem which few photographers consider at all seriously, many thinking that to simply insert a couple screw-eyes in the back of the picture frame and attach to them some picture cord, which in turn is thrown over a nail or picture hook on the wall, is sufficient. True, this may place the picture in a position from which it may be viewed, but the question is, will it show the picture to its best advantage and to give a most harmonious and pleasing effect with other pictures and the room in general?

947. There is as much art in the proper hanging of pictures as with the making of them, and one should study each individual picture before placing it on the wall for display. The two essentials just mentioned, viz., the importance of the individual picture and its relation to other pictures in the room, must always be taken into consideration.

948. If, in the studio, one has a room set apart for the display of pictures, this art room should receive most careful attention and the hanging of the pictures in it should be made a serious study. Even though your reception-room may present the only possibilities at your command for securing a wall display you should follow out these same principles in the hanging of each and every picture.

949. **General Planning.**—It is extremely important that the general appearance of the walls of the room are not ragged, that is, the pictures must be so hung as to present a pleasing effect. The main bulk or weight of the pictures on the wall should be above the eye level.

950. Those pictures which are adjacent drop or rise at

various distances, of course, from this line, and should be made to do so as symmetrically as possible; but the line itself should be traceable throughout all the groupings. By carrying out this idea a harmonious effect will be maintained and a far more substantial appearance secured.

951. **Classification.**—Nothing is so restless and unsatisfactory as a mass of things having different "weight" and character. In the hanging of *portraits* there is not so great a necessity of being uniformly particular in the selection of the subject material as when landscapes are to be hung, but even in the case of portraits, prints of various tones should be hung by themselves. For instance, sepias should not be mixed or hung among black and white prints. Passe-partout pictures should not hang with heavy gold frames. Pictures having a fuzzy effect should not hang with those containing sharp definition. When a careful system of classification is carried on throughout all the varieties of framing, due attention being given to size, color, subject and all other qualities that make pictures different from one another, it will be found that the work is practically done, all that remains to do being but mere pattern-making, which may be carried out upon the floor until the arrangement is quite satisfactory.

952. In this process a little re-mixing of the different varieties, if judiciously done, and with not too great a contrast, will allow of the heavy groups to be lightened here and there and the lighter ones to be strengthened and, in addition, admit of occasional relief of tint as well. As to the general pattern of groups it will be found that a simple method is preferable. Horizontal lines are always safe and if a set of pictures may be had similar in size and style so much the better, and they will look best if arranged in a solid geometrical order.

953. **Contrast Effect by Lighting.**—Galleries built for the express purpose of exhibiting pictures are made with skylights in the center of the gallery, which give fairly even illumination all over, but it seldom occurs that the photographer is fortunate enough to have an art room of this kind.

954. It is by no means an invariable rule that a picture looks best in a strong light. Photographs which are somewhat fuzzy in appearance or belonging to the so-called "artistic variety" usually look their best in a dim illumination. On the other hand, the print with great contrast of tone and wealth of detail should be seen in the brightest spots of light available. The reason for this is that a strong light is so searching in the dark parts of the picture that contrast is minimized and, on the other hand, a dull light enhances contrast because it catches only the lighter portions.

955. If, then, a picture is exceptionally contrasty, this defect is reduced by being placed where the light may fall fully upon it. If, on the other hand, it is flat and lacks detail, it will be immensely benefited by receiving the subdued illumination in which the utmost is made of its light portions, while the shadows are actually under-lighted. In general, the dull light broadens and generalizes, while the bright light reveals everything.

CHAPTER XLVII.

An Inexpensive Studio.

956. There are many forms, plans and arrangements which may be adopted in constructing an inexpensive ground floor studio. One which has proven a great success, for use in small towns where ample space may be had, and which permits of every inch of space within the walls of the building being utilized, is herein described, and is recommended to any one desirous of constructing such a building. The full interior dimensions of this building are 16 x 32 feet, yet the exact size is optional, and one should be governed by the space they have at their command. This studio is supplied with the skylight-room, reception-room, dark-room, as well as printing and finishing-rooms. (See diagram of floor plan, Illustration No. 105.)

957. **Skylight-Room.**—The partition which separates the skylight-room from the other rooms runs diagonally from the front of the building to within five feet of the back. The dimensions are clearly given on the floor plan, the heavy black lines representing the partitions between the rooms. By this arrangement one has use of the full length of the building for a skylight-room, and it is possible to use a lens of fairly good focal length for bust work especially. For full length figures and groups the room is of ample length to work conveniently. The skylight itself may be single or double-slant light. If single-slant it should not be larger than eight feet wide by ten feet high, extending into the room at the top about four feet, and the bottom of the light beginning at three feet from the floor. The slant of the light is about 20° from the perpendicular. Ground-glass will, of course, be the best to use for

the skylight, yet if you do not care to go to the expense of procuring this glass, plain glass may be employed, and if you so desire, tissue or paraffine paper may be pasted in contact with the under side of the glass, in order to diffuse the light.

958. **Covering Skylight with Tissue Paper.**—The simplest method of covering a skylight with tissue paper is to melt lard into a large metal tray and float the sheet of tissue paper on the bath of molten lard. By drawing it over the edge of the tray it is thoroughly drained, and may

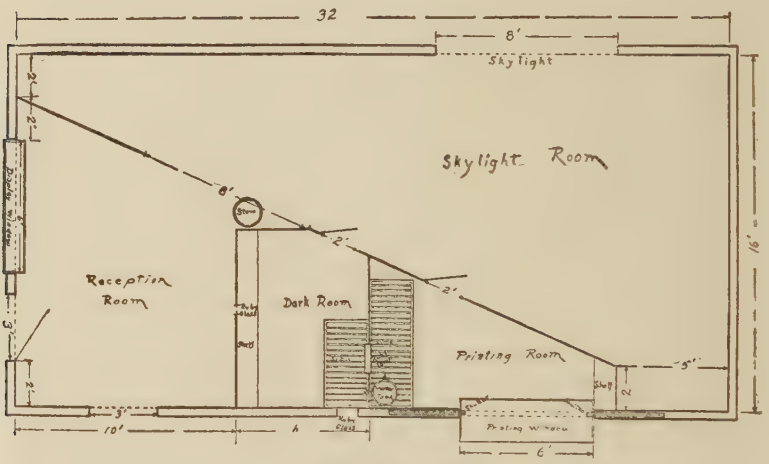


Illustration No. 105
An Inexpensive Studio—Floor Plan
See Paragraph No. 956

be placed against the glass, and with a soft cloth rubbed into contact. This tissue paper should be cut the exact size, before floating; this will save trimming afterwards. A skylight so covered will last for at least two years without renewing.

959. For all around work in a small studio the hip or double-slant light is recommended, with a side-light 4 ft. high by 8 ft. long, beginning 3½ ft. from the floor, and a skylight 8 ft. square, set at an angle of about 45 degrees. This will give a good working light.

CHILD PORTRAIT STUDY

STUDY NO. 50

GEO. J. PARROT

CHILD PORTRAIT STUDY

Study No. 51—See Page 584

J. M. Pottenger

960. **Ventilator.**—A ventilator may be provided at the highest point of the skylight, in the end wall. By having a shutter in this ventilator, controlled by a cord passing through pulleys, the opening can be controlled so as to admit as much fresh air as desired, and is especially advantageous when making flashlights, as it supplies a vent for the smoke.

961. **Color of Walls.**—The skylight room should be painted or papered a neutral or dark color—some color which will absorb light—never a light color, as light colors reflect light. A deep green or slate color will be found very suitable. If the walls are finished with matched lumber, the interior may be stained or oiled; or if it is desired to paper them, the boards should be first covered with some cheap muslin, which is stretched and tacked on to the walls, and then the paper is pasted and hung over the muslin.

962. Burlap makes a good wall covering, and for the skylight-room an olive green is a splendid color. If burlap is employed this will supply a good background for the skylight-room. Where papered walls are intended, plain papers should be used. Where walls are plastered they may be tinted or frescoed. In either case the back wall of the skylight-room may be made to do service for a background, it being of special value for group work.

963. **The Floor.**—The floor of the studio throughout should be of well selected flooring, and of course hardwood flooring would be best, but it is considerably more expensive. A neat, plain rug for the reception-room, and one for the skylight-room, would add to the equipment. Where rugs are not used linoleum serves the purpose very nicely.

964. **Reception-Room.**—In this little studio there are three doors entering into the skylight-room—one from the reception-room, one from the dark-room, and one from the printing-room. The dark-room is very handy to the camera, so that when exposures have been made you may step directly into the dark-room and change the holders. The greatest dimensions of the reception-room are 10 x 14 feet,

with a corner of the room cut off by the partition. Facing the street you should have a large window in which to display pictures; another window should be located at the side of the room, to give illumination. Three or four chairs and a library table may be provided as furniture, and a few neatly framed pictures hung on the walls.

965. In the corner of the room opposite the entrance, next to the side window, one may build a small cozy corner, which would take the place of a couple of chairs and add very materially to the coziness of this room. A large rug may be used to cover the floor, and the walls tinted a plain color. A dark green is a very satisfactory shade, as this color gives the best relief to the pictures displayed.

966. **Dark-Room.**—The dark-room may be situated directly back of the reception-room, and entrance is made to it from the skylight-room. A sink of good size is constructed in one corner, while shelving should be placed on two sides. An opening may be made in the wall of the room, at the point marked P. This hole may be about three inches in diameter, and covered with a sheet of dark ruby glass. The advantage of the little window is, that when you are developing in the dark-room you can see any one who enters the reception-room. This is particularly an advantage in the one-man studio. An excellent sink is one made of cement and a full description is given in Paragraphs 905-913.

967. A shelf should be placed above the sink in the dark-room, on which to place your graduates, hydrometer, etc. Underneath the sink should be shelving for the trays. A fixing and washing box may be arranged in the sink, the washing box being connected to a faucet. A changing box for the plates should be placed on one of the shelves, at a convenient height for handling. If you are using an oil or gaslight as a source of illumination for the dark-room this light may be placed in the finishing-room, and a small window fitted with ruby glass and orange paper placed directly above the sink in the dark-room. By having the light outside of the dark-room the room will not become

warm from the heat of the lamp. Ventilators should be provided, both near the ceiling and the floor, at the point marked V. These should be shielded as directed in Volume II, in the Chapter on Dark-Room Construction.

968. **Printing and Finishing-Room.**—The printing and finishing-room is eleven feet long, and on the outside wall is constructed a printing light fitted with plain glass, a curtain of tracing-cloth attached to spring rollers being used for diffusing the sunlight. The construction of this

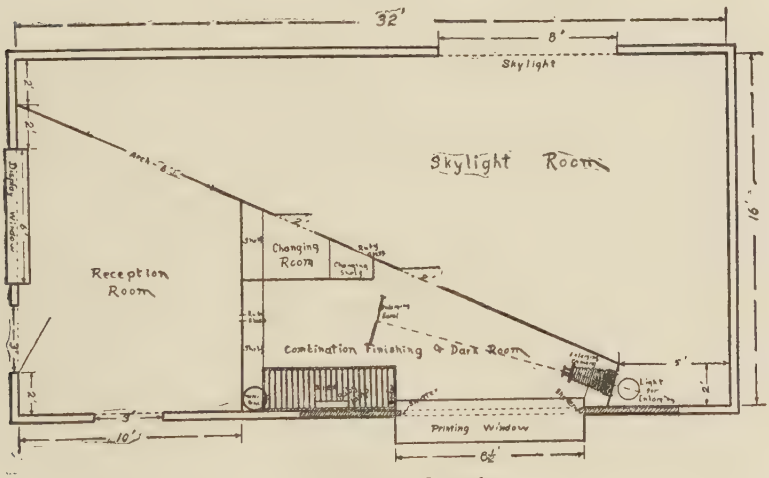


Illustration No. 106
An Inexpensive Studio—Floor Plan
See Paragraph No. 971

light is the same as that given in Chapter XLV—Equipping a Photographic Studio. A sink for toning is placed against the wall backing the dark-room sink. Sliding curtains made of heavy black cloth may be strung over the printing-light, so as to exclude the light when toning.

969. Ventilators should be placed in this room the same as in the dark-room. Shelves may be placed above the printing light, on which to file negatives, etc., while on the wall which separates this room from the skylight-room may be constructed a shelf, hinged to the wall, which serves

as a table, which may be dropped out of the way when you are not printing. This shelf may be used for changing prints, also for trimming and mounting prints.

970. If more space is desired for the printing and finishing-room than is allotted in the floor plan of Illustration No. 105, you can combine the finishing-room and dark-room into one room, and by partitioning off one corner at the dark-room entrance, this corner can be used for a changing-room for changing plates only. For developing you take the plates into the finishing-room, from which all light can be excluded by providing wooden shutters on the printing window, which you simply close tightly during development. The shutters should slide between the outside and inside walls. If properly made this will exclude all light from the room and make it absolutely safe for developing, yet when you desire to use the printing light the shutters are pushed back into the wall and are entirely out of the way. By adopting this latter plan, which is, no doubt, as convenient and as practical as the first, you will have a much larger printing and finishing-room, and will also be able to use the same room for your dark-room.

971. This method also supplies you a means for an enlarging-room, as you will note by Illustration No. 106. You have the full benefit of the two rooms combined, thus permitting of the making of any desired size of enlargement. At the back, or narrow end, of the finishing-room, you may place your enlarging light. The form of enlarging apparatus illustrated in Volume II, in the chapter on Dark-Room Construction, will answer admirably here, the camera being placed inside the partition, while the light is located in the operating-room, just outside the partition. This light, you will observe, occupies a very small space and does not interfere with the general work-room. Either of these plans will be found convenient, and one can suit his own convenience as to which to adopt.

972. **Heating the Building.**—For heating the building a coal stove may be placed in the space allotted between

"CUPID"

Study No. 52—See Page 585

W. H. Partridge

PORTRAIT STUDY

Study No. 53—See Page 585 A. T. Proctor

the reception-room and operating-room. In this position the stove is out of the way, and it also serves to give an even heat throughout the building.

973. **Water Conveniences.**—Where city water can be had there should be at least one tap in the dark-room and one in the finishing-room, arranged over the sink. Where running water cannot be had, a large barrel may be arranged in one corner, over the sink. The barrel should be elevated about three feet above the sink, so as to give some pressure. A hose can be attached to a tap in the barrel, to conduct the water anywhere you desire.

974. **Exterior of Building.**—The studio is best built with a hip roof, with a square front.

975. **Building Material.**—There are three ways of erecting such a building. *First,* by using matched lumber outside and lining the inside also with narrow matched lumber, using the same material for the ceiling, and then finish all in natural wood. A *second* way would be to build what is known as a plank frame building, using inch boards, upright, in place of matched lumber and then siding the outside. Both make a solid, firm building. A *third* way would be to make the framework of studding, 2 x 4 inches, and board the outside first and then side over the boards, and finally lath and plaster the inside. The partitions can be made of inch matched lumber. For all practical purposes either of the first two constructions would be considered best, and can be constructed for from $300 to $400.

CHAPTER XLVIII.

Studio Insurance.

976. **Importance of Carrying Insurance.**—The successful photographer is the one who directs every department of his business, whether under the skylight or in the reception-room; whether the mechanical end of the business, or the business end itself.

977. Not the least important part of the business end of the studio is the careful insuring of the plant to the fullest extent it will carry. The business-like photographer will cause an inventory to be made of every piece of apparatus, every item of stock and accessory down to the smallest detail, giving each its due and reasonable cost, so that later, in case of fire, he may be able to make a valid claim for repayment and have himself fully protected.

978. **Necessity of a Careful and Complete Inventory.**—It is surprising how quickly the sum total of the contents of a studio will mount up when a careful inventory is made. The average man has no idea how much money has been spent in fittings and sundries during a term of years, and will give a rough guess, which will leave him very much a loser in case of destruction of his studio by fire. Further than this, a careful and complete inventory will facilitate the work of the fire adjusters and insure quicker repayment of the losses.

979. **Cause of High Premiums.**—Curiously enough, many photographers, either through carelessness or lack of business foresight, carry little or no insurance, or are away under-insured, their main argument being that there is little or nothing inflammable in their studios. On the other hand, it is notorious that insurance companies place a higher premium on studios than the risk really warrants. Insurance companies still have in mind the old days when

collodion and gun-cotton were in daily use in the studio for the preparation of wet plates, and when the skylight-room was full of papier mache accessories and multitudinous backgrounds. Actually, the studio of today contains no more inflammable materials than the average business office, but the insurance companies cannot always be made to see this.

980. **Two Kinds of Policies.**—Insurance policies fall under two heads, the "blanket" policy and the "specific item" policy. Generally speaking, the latter form of policy is the best for the photographer, as it will enable him to recover a greater percentage of losses.

981. Under this form it is always a wise plan to specify negatives as a separate item, for you will obtain a better return on that basis. For instance, should you lump furniture, fixtures and negatives together as one item, covering them with a policy of $3,000, in case of destruction of the negatives the company will deduct the value of the furniture and fixtures and only pay the balance on the negatives, although the value of these may be fully $3,000. Therefore specify a certain portion of your policy to cover the value of your negatives at the figure you are able to obtain for them from the company. Then, in case of their loss you will be able to recover that amount.

982. **The 80% or Co-Insurance Clause.**—A considerable saving in premiums can be effected under what is known as the 80% or Co-Insurance Clause. Under this clause the insured agrees to insure to the extent of 80% of the value of the property, but any amount under that 80% that he does *not* carry in some insurance company he bears himself—the effect is the same as if he wrote a policy on his own property for the balance of the amount.

983. For instance, suppose your property to be worth $10,000. Under the 80% clause, which will save you considerable in premiums, you should virtually insure for $8,000. Now, if you insure in some company for only $5,000, you will be carrying $3,000 yourself plus the $2,000 difference between the 80% and the total value. In the

event of a partial loss of your property by fire the company will repay you five-eighths of the amount of the loss; as for example, if the loss is $2,000 the company will pay five-eighths of this amount, and you will have to stand the balance yourself. Should the loss be $8,000, or even a total loss, the company will repay the total amount of the insurance, namely $5,000. To avoid loss on your part, it is, of course, the wisest plan to insure to the full extent of the 80% value, and as fires seldom occasion total loss you will be fully protected and at the same time save considerable on premiums as against a straight insurance for the total value.

984. This 80% clause is generally operative only in cities or towns provided with water works and a fire department. In places where these are non-existent, insurance companies usually insert a three-fourths clause, by which is meant that the liability of the company is limited to either three-fourths of the value of the property insured, or three-fourths of the loss incurred, according as the clause is worded. The object of this is to make the insured more careful of his property, as the means of fighting a fire are more limited than in big towns or cities.

985. **The Value of Old Negatives.**—The greatest difficulty in adjusting the fire claims of a studio usually occurs with the negatives. Old negatives may have a special value to the photographer and are frequently one of his best assets, but the insurance companies will not consider them as worth much more than old glass, and the best value that can be obtained for them is usually not over fifty cents apiece, and generally under that figure. If the insured is carrying less than that total of 80% insurance (in other words, carrying part of the insurance himself), and in the division of the amount to cover the various items of property only a small portion of the amount is devoted to negatives, the chances are that the loss on the negatives will be quite considerable.

986. **Uninsurable Property.**—Accounts, bills, currency, evidences of debt, money, notes or securities are unin-

surable, and the following items of property are *not* covered by your policy *unless specifically mentioned therein:* Awnings, bullion, casts, curiosities, drawings, dies, implements, jewels, manuscripts, medals, models, patterns, pictures, scientific apparatus, signs, store or office furniture or fixtures, sculpture, tools or property held on storage or for repairs.

987. **Notice of Loss.**—If a fire occurs it is the duty of the insured to immediately notify the company in writing, either direct or through your agent. Failure to notify the company within the time specified will make your policy void. Verbal notice to the agent is not sufficient.

988. A good form to use is as follows:

> National Union Fire Insurance Company.
>
> You are hereby notified that my property, insued under your policy No. 582, was, on the 10th inst., at about 5 o'clock P. M., damaged (or destroyed) by fire. Please send your adjuster as soon as possible, advising me who will represent you and when he will be here to take up the adjustment of the loss.
>
> Respectfully,
>
> JOHN JONES.

989. **After a Fire.**—After a fire it is the duty of the insured to separate the damaged and undamaged property; to put it in the best possible order, and to make a complete inventory of the same. Don't imagine you can sit still and do nothing, and that the insurance company has sixty days in which to settle your loss. The case is the reverse. You have sixty days in which to present your claim, according to the directions in your policy.

990. **Protect Yourself.**—Have your premises and property carefully examined by fire insurance experts and see that your policy is correctly written. Protect yourself to the full extent of the 80% clause and read your policy carefully so that you know where you stand.

991. *Above all, do not fail to be insured.*

CHAPTER XLIX.

The Ownership of Photographic Negatives.

992. **Private Customers.**—In the absence of a stipulation to the contrary, the ordinary bargain between a photographer and his customer includes, by implication, an agreement that the latter shall control the disposition of the prints from the negative for which he or she sits. The unathorized use of the photographs by the photographer is a breach of implied contract, as well as violation of confidence, even though the ownership of the negatives may be in the photographer.

993. **Public Characters.**—Public characters, however, are, in the majority of cases, denied the protection of the above rule. When a person submits to being photographed in his public capacity, free of charge, there is an implied agreement that the photographer may exhibit and sell the photograph.

994. **Third Persons.**—The weight of authority seems to be that the unauthorized use of a person's photograph by third persons (when not libelous) is neither objectionable at law nor restrainable at equity as an invasion of his right of privacy. It has been held that the owner of photographs of other persons has a property right in them, entitling him to maintain an action for their detention or use by third persons, without the sitter's permission.

995. In the State of New York, however, it is not permissible under the law to show or display, or cause to be shown or displayed, for the purposes of advertising either the photographer or some merchandise, in the photographer's gallery, or elsewhere, or in public, the photograph of any private person without written permission of the said person. A heavy fine can be imposed, for any infringe-

ment of this act, on the person or firm displaying the pictures without permission. In the case of a minor, written permission of the guardian or parents should be obtained.

996. **Permission for Right of Reproduction from Subjects.**—The photographer should always secure the written permission from the subjects for the use of their photograph or photographs. There are cases where the subject may demand that the specific purpose for which the photographs are to be used be enumerated in the contract, but the simpler the contract and the less details incorporated therein, the better for the photographer, as it allows him a wider range for the use of the photographs. There may be a time when he will desire to use the photograph, and if the permission from the subject was for a specific purpose he might find it difficult to obtain another permission. For this reason, the simpler the contract the better, and the following form is an excellent one. This should not only be signed by the subject, but also by two witnesses:

997. **Contract Permit.**—

Scranton, Pa. May 22, 1908.

For value received, I hereby grant ....., Photographer, the right to the use of my photograph for the purpose of reproduction.

Dated ..... day of ..... 190..

Signed, ...

Witnessed:—

.....

.....

998. If the subject desires to have stated the exact purpose for which the photograph is to be used, as well as to limit its use, these particular features may be incorporated in the contract, but if nothing is said regarding the matter the above form will answer the purpose. Should the subject be a minor, the parent must also sign the form.

CHAPTER L.

Copyrighting Photographs.

999. To secure the undisputable right of reproducing certain photographic negatives and prints is often desirable. Our own government, as well as that of foreign countries, has a system known as copyright, which offers protection on all subjects, such as musical composition, art models, books, magazines, photographs, etc. The purpose of this chapter is to clearly define only those portions of the new United States law, which went into effect July 1, 1909, that apply to photographic negatives and prints. To those unfamiliar with the subject it may be well to state that this new copyright law is very materially different from the old one, but we will not dwell on this.

1000. **Securing Copyright Protection.**—To secure copyright protection all that is necessary is to file, with the Register of Copyrights, at Washington, D. C., a properly filled out "Application for Copyright" blank; also deposit two prints, if it is desired to reproduce such prints for sale. If, however, the photographer does not wish to reproduce his prints for sale, only one photographic print need be deposited with the claim of copyright. In either case it is necessary to place a notice of copyright on every print made as designated by the copyright law.

1001. It will thus be seen that copyrighting a photograph is not a difficult or troublesome task. Simply comply

with the instructions given on the copyright application blank, which blank, together with a regular bulletin issued by the copyright office, can be secured by writing to the Librarian of Congress, Washington, D. C.

1002. All articles that can receive copyright protection have been arranged in different classes. For instance, periodicals, including newspapers, are in Class *b*; musical compositions in Class *e*; photographs in Class *j*; while prints and pictorial illustrations belong to Class *k*; therefore, when making application for copyright of a photograph, specify Class *j*. Failure, however, to specify the classification of photographs will not invalidate nor impair the copyright protection.

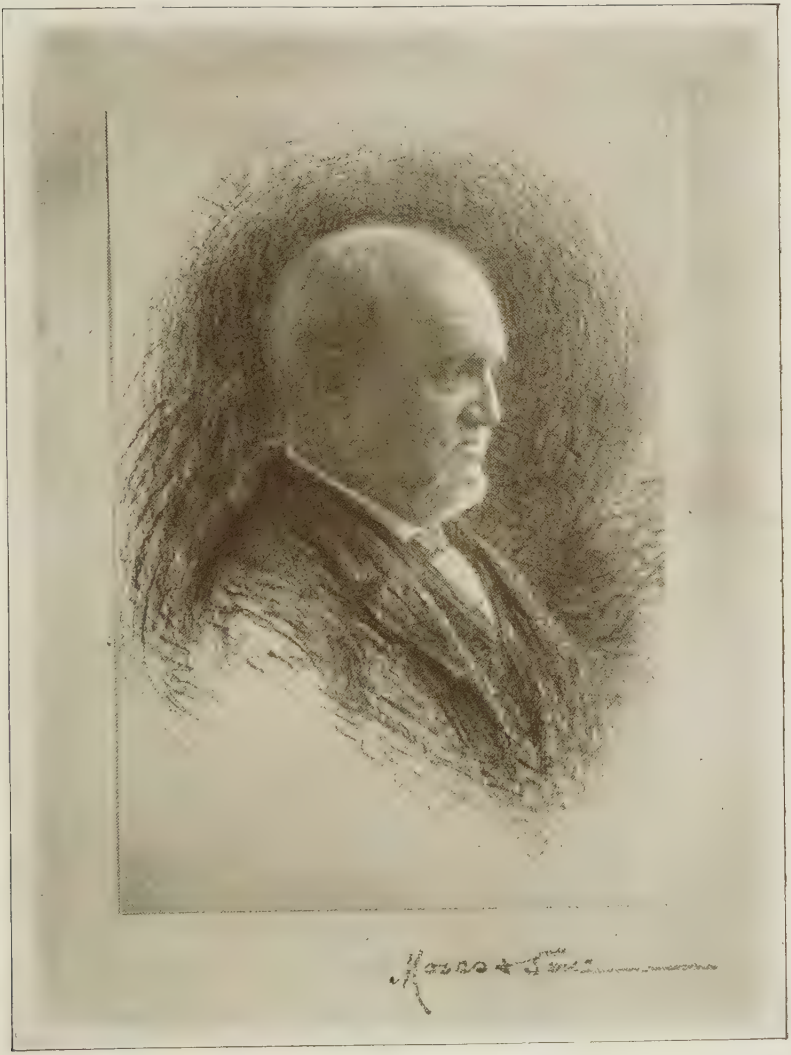
1003. **Two Complete Copies of Best Edition.**—A very important consideration in connection with the securing of copyright protection is the depositing in the copyright office, or in the mail, addressed to the Register of Copyrights, Washington, D. C., two permanent prints from the negative on which copyright protection is claimed. (If the negative is not to be reproduced in copies for sale only one print need be deposited with the register of copyrights.)

1004. **Failure to Deposit Copy.**—If the copies required by law are not promptly sent to the register of copyrights after having made the negative and filed the application for copyright protection, the register of copyrights may at any time after the negative is made, upon actual notice require the proprietor of the copyright to deposit them. If after the said demand shall have been made, in default of the deposit of the prints from the negative within three months from any part of the United States, except in outlying territorial possessions of the United States, or within six months from any outlying territorial possession of the United States, or from any foreign country, the proprietor of the copyright shall be liable to a fine of One Hundred Dollars, and to pay to the Librarian of Congress twice the amount of the retail price of the best edition of the work, and the copyright shall become void.

1005. **Postmaster's Receipt.**—In sending prints to the

PORTRAIT STUDY

Study No. 54 J. C. Strauss



PORTRAIT STUDY

STUDY No. 55

MOSES & SON

register of copyrights, on which copyright protection is to be secured, they should be delivered, ready for mailing, to the local postmaster. Ask him to give a receipt for them, and he will also mail them to their destination without cost to the copyright claimant.

1006. **Fees.**—The cost for copyrighting a photograph is fifty cents for registration. If one desires to secure a certificate of registration, an additional fee of fifty cents is charged. The certificate is not necessary, however, unless one wishes to show proof of registration, or to sell the copyright. The certificate of registration can be secured at any time after having copyrighted a negative. The registration number in this case, however, must be given.

1007. **Fee for Recording Assignment.**—When making an assignment of copyright, if such assignment does not consist of over three hundred words, the fee is one dollar; if more than three hundred and less than one thousand words in length, two dollars. Etc.

1008. **Notice of Copyright.**—Notice of copyright required by the new law consists either of the word "Copyright" or the abbreviation "Copr.", accompanied by the name of the copyright proprietor. In the case of photographs, however, the notice may consist simply of the letter C enclosed within a circle, thus ©, accompanied by the initial, monogram, mark or symbol of the copyright proprietor. But on some accessible portion of the photograph, either the margin, back, or other permanent base on which the print is mounted, the name of the copyright proprietor must appear. If the copyright was secured previous to July 1, 1909, the old form of notice may be used, if desired. This form is: "Copyright, 19—, by—." In other words, the word copyright must be used, followed by the year in which copyright protection was secured, and this, in turn, followed by the full name of the copyright proprietor.

1009. **Infringement of Copyright.**—If any person shall infringe the copyright in any work protected under the copyright laws of the United States, such person is liable, *first,* to an injunction restraining such infringement, and *second,* to

pay to the copyright proprietor such damages as the copyright proprietor may have suffered, due to the infringement, as well as all the profits which the infringer shall have made from such infringement, and in proving profits the plaintiff shall be required to prove sales only, and the defendant shall be required to prove every element of cost which he claims, or in lieu of actual damages and profits, such damages as to the court shall appear to be just, and in assessing such damages the court may in its discretion allow damages which shall not exceed Five Thousand Dollars, nor be less than Two Hundred and Fifty Dollars, *with the exception* of the case of a newspaper reproduction of a copyright photograph, when such damages shall not exceed the sum of Two Hundred Dollars, nor be less than the sum of Fifty Dollars. In either case the infringement shall not be regarded as a penalty.

1010. **No Action for Infringement Until Deposit of Copies.**—No action or proceeding shall be maintained for infringement of copyright in any work until the provisions of the copyright law with respect to the deposit of copies and registration of such work shall have been complied with.

1011. **Omission of Notice by Accident or Mistake—Innocent Infringement.**—If the aim of the copyright proprietor has been to comply with the provisions of the copyright law with respect to notice, the omission by accident or mistake of the prescribed notice from a particular copy, or copies, shall not invalidate the copyright or prevent recovery for infringement against any person who, after actual notice of the copyright, begins an undertaking to infringe it, but shall prevent the recovery of damages against an innocent infringer who has been misled by the omission of the notice, and in a case for infringement no permanent injunction shall be had unless the copyright proprietor shall reimburse to the innocent infringer his reasonable outlay innocently incurred, if the court in its discretion shall so direct.

1012. **False Notice of Copyright.**—Any person who with fraudulent intent inserts or impresses any notice of copyright required by the copyright law, or words of the same

purport, in or upon any uncopyrighted article, or with fraudulent intent shall remove or alter the copyright notice upon any article duly copyrighted, shall be guilty of a misdemeanor punishable by a fine of not less than One Hundred Dollars, and not more than One Thousand Dollars.

1013. **Duration of Copyright.**—According to Section 23 of the copyright law, copyright shall endure for twenty-eight years from the date of first publication, whether the copyright bears the author's true name or is published anonamously or under an assumed name. At the expiration of this term the copyright may be renewed for another term of twenty-eight years, but such application must have been made to the copyright office and duly registered *within* one year prior to the expiration of the original term of the copyright. Again at the end of the second term a renewal of another term of twenty-eight years can be made to the author's widow, children, heirs, or next of kin. *In any case, however, copyright ends in twenty-eight years' time unless renewed.*

1014. **Copyrighting Customers' Photographs.**—If a person sits for a photograph, or if one photographs anything that belongs to a customer and the customer pays the photographer for the service, the photographer copyrighting the photograph, the copyright will be in his name and he can use it until stopped by injunction granted on the ground that the photograph, although taken by the photographer, was paid for and is the property of another. In this case the copyright would still be in the photographer's name, but would be of no use to him, neither would he have a right to use it after being enjoined. In all cases where the photographer wishes to copyright a photograph for which he has been paid, it is necessary for him to secure the consent, in writing, of the customer; or, if a piece of property, the consent of the owner, and such consent must be witnessed by two people, who sign as witnesses.

1015. **Copyrighting Photographs of Public Characters.**—On the other hand, if the photographer invites some one to come to him and have their photograph taken, for which

the photographer makes no charge, the photograph is the property of the photographer and he has the full protection of the copyright law if he desires to copyright such a photograph. No matter whether the photographer takes a photograph for nothing, or whether he is paid for it by regular customers, it is always best to secure the consent, in writing, of the subject, so as to avoid any future trouble regarding it.

1016. In other words, the photographer is the producer of a photograph; therefore, he can copyright it and is always protected with that copyright against the whole United States, excepting against the actual owner, if there be any.

1017. **Value of Copyright.**—It may be stated, in general, that there is but little value in obtaining a copyright of the average photograph. Only in a case where the photographer has a photograph of something exceptionally valuable, or an extremely artistic photograph of a person, is there any need of securing a copyright.

1018. The main object of a copyright is to enable the photographer to control the output of prints from that particular negative, and also control the reproduction of any such prints. It must be borne in mind, however, that even after having secured a copyright another photographer may photograph the same object or view from almost identically the same view-point, and have a perfect right to the sale of prints from his negative, although the prints may appear to be practically identical to the ones on which the copyright has been secured. In case of action or suit being brought in such instances, however, it will be necessary for the photographer who did not secure the copyright of his photographs to prove that his negative is an original one made of the scene, and not a copy of the copyrighted photograph.

1019. Any attempt to overrule the written law of the United States is punishable by fine, and one should by all means come within the provisions laid down by law.

1020. **Permission for the Use of Copyright Photo-**

graphs.—A permission granting the right to the use of a copyrighted photograph for reproduction or other purposes must be secured, in writing, from the owner of the copyright. The following form of license (Illustration No. 107) is the one adopted by the Professional Photographers' Association:

PIRIE MACDONALD, Photographer of MEN

141 Broadway, Washington Life Building, New York

LICENSE No. 1162 GRANTING PERMISSION FOR THE USE OF COPYRIGHT PHOTOGRAPH

N. Y., 9/20/07 190

On payment of the sum of —— Dollars, you are authorized to reproduce by the Half Tone process, my copyright-photograph of Edwin Markham in any size not exceeding 2x10 the line "COPYRIGHT 1903, BY PIRIE MACDONALD, PHOTO'R OF MEN, N. Y." to be printed under each impression. (It is agreed that a copy of the issue, showing cut and copyright-notice is to be sent to me on day of publication).

This permission and fee is for reproduction in Complete Library of Practical Photography and for one issue only, and the subject may not be reproduced or sold as an independent illustration, separate from the above publication and its accompanying letter press If any other use is desired, a fresh permission and payment will be required

Witness, [illegible] Pirie MacDonald

NOTICE.—Any one copying my Copyright-photographs for the purpose of reproduction or illustration either in Newspaper, Magazine, Book or other form, without first obtaining my permission, will render himself liable to an action for infringement of copyright.

Illustration No. 107
Copyright License
See Paragraph No. 1020

1021. It will be seen, after reading this blank, that the license grants reproduction in one place, for once only. The photographer can sell the sole copyright outright (with or without the negative, though usually the negative is included for such a purpose), or, he can split up the copyright in various ways and dispose of the parts—*i. e.*, make limited assignments of the copyright—in every case in writing. As an example, in the case of an attractive portrait subject, a photographer might sell to other persons or firms:

Right to reproduce in daily papers.
Right to reproduce in weekly papers.
Right to reproduce in monthly magazines.

Right to reproduce in books.

Right to reproduce as photographic postcards.

Right to reproduce as colored (printed) postcards.

Right to reproduce as posters or window bills, which latter, again, might be further distributed amongst various distinct trades. In these cases, the person to whom permission was granted would have the right only for the specific purpose mentioned in the memorandum or license to him. The license should grant permission for a particular purpose, nothing more. For example, a form of permission such as,

> *Received of Mr. John R. Henderson, the sum of $10.00, for the right to reproduce my portrait of General Grant.* [Signed]
> *C. J. Johnson.*

gives the purchaser (Henderson) the same rights as Johnson (the proprietor), and he is privileged to use the picture as he sees fit.

1022. **Permission for Right of Copyright from Subjects.**—Unless there is an agreement to the contrary, all portraits taken at a sitting are the property of the person who orders the sitting. Even if a photographer takes a sitter in several positions, he has no right to print from any of the negatives without the sitter's permission. The reason for this is, that in the taking of a photograph payment is for all attempts, and, therefore, the copyright is not vested in the photographer. Even if a person brings a sitter to the studio, to be photographed, and orders some portraits, the copyright falls to the person who orders and pays for the picture. In the case of groups, such as those of basket-ball clubs, etc., the secretary or treasurer of the club, whoever is responsible for payment, is the owner of the copyright.

1023. If the photographer receives no payment for the sitting, the copyright falls into his possession, and as it is

his, he is, therefore, at liberty to sell prints to the sitter or anybody else. In other words, it was a "free sitting."

1024. Even if the photographer accepts a reduced price for the sitting he has not a right to the copyright, for in that, and indeed in any case where it is possible to assume he has been fully paid, he must get the sitter to transfer the copyright to him, if he wishes to acquire it. The following form shows the kind of agreement suitable for this purpose:

1025. **Agreement for Transfer of Copyright.—**

For value received, I hereby grant.....
....., Photographer, the right of ownership to copyright, and the ownership in the copyright, of the negatives made of me this day.
Dated .... day of ..... 190..
Signed, ...
Witness .....
.....

1026. The transfer of the copyright in this way, to the photographer, deprives even the sitter of the right to allow the photograph to be reproduced, but photographers who work largely on the "free sitting" principle usually do not overstep the mark in collecting a fee from the sitter, when the latter wishes to reproduce it. It is usual, for example, to allow an actress to employ the photograph on her professional card or in such circumstances in which otherwise she would have to pay for the reproduction.

CHAPTER LI.

Color Photography.

By Henry J. Comley, F. R. P. S., Stroud, England.

Part I.

The "Autochrome" Process.

1027. The "Autochrome" screen-plate process of color photography has been truthfully described as the greatest advance in photography since the advent of collodion emulsion; for it has given to the world the first really practical and commercial method of making camera pictures direct from nature, which faithfully reproduce all the subtle charm of her beautiful form and color. This is the solution of the great problem which every photographic scientist since the days of Niepcie and Daguerre has longed to solve, and yet it has at last been solved in the identical manner which was suggested as possible by Louis Ducros du Hauron, of Paris, forty years previously. Du Hauron, in 1868, claimed that if a photographic plate was prepared with a transparent paper screen attached, upon which either lines or dots of transparent color were closely printed, it would be possible to make pictures reproducing nature's colors direct in one operation in the camera. But, although more than one praiseworthy effort was made, both in America and Europe, to make a commercial success of a process worked out upon these lines, it has remained for fellow patriots of Du Hauron to bring it to a successful issue.

1028. In the manufacture of the Autochrome screen plate, Messrs. Lumière have had to overcome mechanical and physical difficulties which would have caused most men

to give up in despair, so that the success to which they have attained is something more than the outcome of scientific research.

1029. **Process of Manufacture.**—A brief description of the manufacture of these wonderful plates will make this clear. Carefully selected sheets of glass are polished and coated with a transparent glutinous substance, upon which is dusted a mixture of colored potato starch grains, practically uniform in form and size, and of such microscopic proportions as about 20,000 to the inch. The plates are then put into a machine which presses and slightly flattens the starch grains so that the small intercesses between them are, as far as possible, filled up; the remaining spaces are then filled in with carbon black.

1030. A coating of water-proof varnish is next laid over the starch grains, and upon this is spread a panchromatic photographic emulsion of extremely fine grain, which consists probably of a mixture of gelatin, with a substance similar to collodion. The starch grains are of three colors, *i. e.*, red-orange, blue-violet and green. These colored grains are mixed in such proportions that the mixture is of a neutral gray tint. The proportions of each color per 100 grains is as follows: green, 45; violet, 28; red, 27. These microscopic light filters do not differ materially in color from those usually employed for three-color work, and by various combinations of quantities of these colored grains, all the colors of nature are reproduced.

1031. It will be noticed that there are neither yellow nor blue grains employed, yet these two colors are most faithfully produced in a finished Autochrome picture. The combination of red and green light equals yellow, and so red and violet equal blue. White is, of course, an equal combination of the three colors, and though a pure white would seem to be impossible upon these plates, when sufficient depth of color and shadow surround a white object it appears to be a beautifully pure white by contrast with its surroundings. So that it may, with some truth, be said that the color effect presented to the eye, by these

plates, is a scientific optical illusion. But whatever it may be, the results are really wonderful and beautiful, and the inventors deserve all the success to which they have attained.

1032. **The Principle Involved.**—In making an Autochrome picture the principle involved is as follows: The plate is put into the plate-holder the reverse way, so that the glass side shall be toward the lens when in the camera. This is necessary in order that the light shall first pass through the screen or starch grains before reaching the sensitive film of the plate. After exposure the plate is developed, and then immediately reversed, or converted from a negative into a positive. All the developed negative image being dissolved away, the remaining unaffected silver is re-developed and so forms the positive picture.

1033. On exposing the plate in the camera, all the red objects in the scene before it affect only the portions of the plate covered by the red starch grains, and the green and violet objects and tints of color only affect the sensitive film which lies over the starch grains of corresponding colors, so that when the plate is developed, these minute portions of the emulsion produce a silver deposit, which by transmitted light completely obliterates the colors which were photographed, leaving only the colors complementary to them. Thus, if this negative image is now fixed without any further treatment, all red and yellow objects will appear blue-green, green objects will appear violet, and blue objects appear yellow.

1034. Instead of fixing, however, the opaque, deposited silver particles are dissolved out of the film, leaving the required colored particles clear and bright. The remaining undeveloped emulsion is then exposed to daylight and re-developed, so that the silver, which would in the ordinary way be dissolved out in the fixing bath, is now deposited to form the picture by covering up the grains of color which is complementary to the colors of the original; and the result is a picture in natural colors.

1035. This, briefly, is an outline of what happens in the making of an Autochrome, but we will now go fully into

all the details of the various stages of the work, so that if carefully followed out, failure will be impossible.

1036. In the first place it should be observed that owing to the fact that it seems to be impossible to make an emulsion which is not more sensitive to blue than any other color, it is necessary with Autochrome plates to use Lumière's Special Absorption Filter to correct the blue rays. This filter must be fixed onto the camera, either in front or behind the lens, and a carrier for the purpose must be provided. When using a behind or between-the-lens shutter, it is advisable to arrange the screen carrier for fixing onto the hood of the lens; otherwise it may be fixed behind the lens inside the camera. It should be noted, however, that in the latter position it becomes an additional element to the lens, and with some varieties of lenses it will have the effect of slightly increasing the focal-length. This is not so when the screen is in front of the lens, but in this case it will be necessary to reverse the focusing-screen of the camera, so that the ground-glass side is behind, in order to allow for the reversion of the plate in the plate holder.

1037. In either case it is a wise plan to finally focus with the screen in position, so that any discrepancy may be adjusted. Wherever the light filter is placed, great care must be taken to prevent any trace of light reaching the plate, except *through* the filter, or incorrect color rendering will result. Although the absorption filters supplied are especially adjusted for these Autochrome plates, satisfactory ones can be made by dyeing up a fixed out transparency plate in filter yellow K, to which has been added a trace of bluish scarlet. It is also advisable for landscape work to further slightly dye one-half of a filter with a green, such as Naphthol green, or brilliant green, as is used for wool. This, if used for the sky, will give a much truer rendering of the blue than is possible with a plain tint screen, because the sky is almost inevitably over-exposed.

1038 **The Dark-Room.**—The next consideration is the dark-room. It must be remembered that the emulsion

of the Autochrome plate is sensitive to all the colors of the visible spectrum, and that, therefore, the ordinary dark-room illumination will be useless. Indeed it is far better to get into the habit of working these plates in total darkness. But if any light is used at all, it should be one of a very deep green color, and even then the direct rays of this, the least actinic color, must not be allowed to fall upon the plate.

1039. Having carefully excluded any possible trace of white light which may come from under the door or elsewhere, take a plate out of the box and, with a piece of linen rag, carefully clean the glass side and put it into the plate-holder, glass side downward. Then place on top of the plate one of the black backing cards which are supplied with the plates, with the black surface toward the film. A better plan is to have the cards covered with black velvet for this purpose, as much cleaner results are obtained than when the black cards alone are used. If a camera of a larger size than the Autochrome plate is employed, the backing cards may advantageously be hinged on to the plate-holder, by attaching a strip of gummed paper along one side. This will avoid getting the cards mislaid in the dark-room, and, what is more important, will insure against forgetting to use the backing, which is highly essential.

1040. **Exposure.**—We now come to the most important item in Autochrome work, and, it must be said, the only stage of the work which presents any difficulty, if the subsequent instructions are carefully followed out. In order to make really good Autochrome pictures, the exposure must be correct. It will first be useful to know that the comparative speed of this plate is about 100 times less than the Eastman's Kodak film, or any ordinary extra rapid dry plate. Primarily, the Autochrome emulsion is one-fifth the speed of Kodak film, then the yellow absorption filter increases the exposure five times, and the color starch grains increase the exposure four times, so that we have $5 \times 5 \times 4 = 100$. It will, therefore, be clear, that under conditions in which a Kodak film would be fully ex-

posed in a one-hundredth of a second, the Autochrome plate will require a full one-second exposure. It is advisable at all times to measure the actinity of the light by means of an actinometer, so that some degree of standardization may be arrived at; although so varied are the exposures necessary under various lighting and weather conditions, it would seem to be impossible to lay down a standard exposure scale which could at all times be a reliable guide; but if careful record of every exposure and result is made, it will be found to be invaluable for future reference.

1041. Using a **Watkins' light meter**, and working in the open air on a sunny day in summer, the speed of the Autochrome plate will equal Watkins' 3, when working with the lens stop f. 8. That is to say, the exposure required for a sunlit landscape will be one-third the time which the meter paper will take to darken to the standard tint. If, however, the sun is obscured, or the object photographed is in the shade, then the plate speed will be Watkins' 2, and the exposure will be half the meter time. Again, if the exposure is made in a well-lighted room or studio, the speed of the plate becomes Watkins' 1, and the time of exposure will be the same as the time which the meter paper takes to tint; the lens stop in each being f. 8. At f. 6 the exposure will be reduced by half, and at f. 16 increased four times.

1042. If **Wynn's actinometer** be used, the speed of the plate in the open air should be taken as 14, and similar variations of calculation made in order to arrive at the correct exposure under varying conditions.

1043. The extreme thinness of the Autochrome film allows very little latitude in exposure, so that a very slight incorrectness, under or over, will show itself in the quality of the finished result. In a weak light, and particularly in autumn and winter, the ratio of exposures necessary will be considerably higher than those suggested, it being sometimes necessary to increase the exposures as much as six to ten times the meter time. As with ordinary photography, great allowance must also be made in exposure when it is

desired to make a large image of the object photographed, necessitating the placing of the camera close to the subject, and greatly extending the focal-length.

1044. In landscape work, it is often advisable to slightly under-expose, particularly in bright summer sunlight. Over-exposed landscapes have gray or pink skies, and while under-exposed views, in which heavy foreground foliage appears, will have an excess of blue in all the greens, slight under-exposure gives a better rendering of the blue of the sky. A deeper yellow light filter, or one made as before suggested, with a slight green tint over one-half, gives a much better rendering of brightly lighted landscapes than Lumière's normal screen.

1045. **Development.**—We will now give full working details for development and finishing of Autochrome pictures, and while we believe that in the hands of some workers the original Lumière formula gives the best results, we are convinced that certain modifications will generally be found to be advisable, so that although the following solutions are lettered for uniformity in the same order as Lumière's, slight but important modifications have been made in the formulæ.

Table of Formulæ for Use with Autochrome Plates.

1046. **In First Development.—**

A.

Water	10 ozs.
Pyrogallic Acid	135 grs.

B.

Water	9 ozs.
Liquor Ammonia (880)	1 oz.
Potassium Bromide	145 grs.

1047. **For Reversing Image.—**

C.

Water	80 ozs.
Permanganate of Potash	70 grs.
Sulphuric Acid	6½ drs.

It is advisable to add the sulphuric acid to the permanganate solution (5 minims to each ounce of solution) immediately before use.

1048. **Positive Re-Developer.—**

D.

Distilled Water .....20 ozs.
Sodium Sulphate .....4½ drs.
Amidol .....1½ drs.

1049. **For Oxidation of Developer.—**

E.

Water .....50 ozs.
Acid Permanganate, C Solution .....1 oz.

1050. **For Intensification.—**

F.

Water .....20 ozs.
Pyrogallic Acid .....1½ scruples
Citric Acid .....1½ scruples

G.

Distilled Water ..... 4 ozs.
Nitrate of Silver .....1½ drs.

1051. **Clearing Solution.—**

H.

Water .....40 ozs.
Permanganate of Potash .....1 scruple

1052. **Fixing Solution.—**

I.

Water .....20 ozs.
Sodium Hyposulphite .....3 ozs.
Commercial Sodium Bisulphite .....1 oz.

Potassium meta-bisulphite, 60 grains, may be used instead of the sodium bisulphite, if the latter is not in stock.

1053. **Varnish.—**

J.

Pure Benzine (Crystallizable) .....3½ ozs.
Gum Dammar .....300 grs.

1054. A valuable alternative varnish is made by dissolving in two ounces of amyl acetate as much thin sheet celluloid as it will take up, and using this as a stock solution, reducing it to a working consistency in a second bottle by the addition of amyl acetate. This varnish will stand the heat of the projecting lantern much better than any gum varnish,

1055. **Caution.**—So delicate is the nature of the Autochrome plate, that in a wet condition the slightest touch will cause abrasion, which is irreparable. It is, therefore, advisable to handle the plate as little as possible. The use of glass dishes will be found to reduce the risk of damage, and will also save time, as it will not be necessary to take the plate out of the dish to inspect it. The whole of the manipulations, with the exception of Nos. 3 and 13, (see Table of Manipulations) may, with advantage, be carried out in one dish.

1056. **Special Note.**—All solutions must be used at a temperature of 60° to 65° Fahr.

1057. Having prepared the developer A and B in two separate vessels, do not mix together until the last moment, when the plate is in the developing dish; then pour developer onto the center of the plate and keep the dish rocking during the whole time of development, which is complete in two and one-half minutes. The developer must then be poured away and water immediately poured from a jug onto the plate, without removing it from the dish; fifteen seconds' washing—three quick changes of water—will be sufficient.

1058. Now transfer the plate to a bath of C reversing solution for four minutes, when it may be examined by white artificial light. If, on looking through the plate, any semi-opaque patches appear, it must be returned to the reversing bath for a minute, or until the patches have dissolved out. The plate is then put back into the first dish and washed with six or eight changes for half a minute, when it is ready for re-development with D solution. Redevelopment must either take place in daylight or in the light of an electric arc or bright incandescent gaslight. In either case the plate must be exposed to the light, for a few seconds only, before pouring on the amidol developer; otherwise, shadows will appear along one or two sides of the picture, often cutting off part of an important feature in the scene. The positive image is usually fully developed in three minutes, but it is highly important that develop-

ment shall be carried as far as possible. Now wash for half a minute and pour on E solution. It is important that this solution shall be allowed to act for eight to ten seconds only, or the finer details of the picture will disappear. Wash away immediately, giving four good changes of water.

1059. If the picture is sufficiently bright and clear at this stage it may be considered finished, and dried without any further treatment; but usually, when using the foregoing series of formulæ, it will be found that the picture is much improved by intensification. This is done as follows: The F solution is first measured out and poured onto the plate, then the G solution is measured out and added to the F by pouring into one corner of the dish. Intensification may be carried on until the solution becomes turbid; and it may sometimes be even necessary to treat with a second new bath of intensifier; after which wash for half a minute, and treat with the clearing solution H for one minute. Should a trace of green fog appear on the surface, or the whites become tinted yellow, treat with a second bath of H solution. Wash for half a minute and transfer to the fixing bath, I, for two minutes, afterward giving a final washing for five minutes. If great reduction of density takes place in the fixing bath, the time of re-development may be extended even to five minutes The picture will, however, fix out if it has not been sufficiently exposed to daylight or other strong actinic light during re-development.

Where not otherwise mentioned, the solutions must only be used once.

1060. In the various washings it is not advisable to allow the water to fall direct from a service tap onto the plate, as trouble may arise from frilling at the edges, or even in the middle of the plate. If the water is poured on from a jug, as previously suggested, the film is not so likely to frill.

TABLE OF MANIPULATIONS.

1061. The following table will be found useful in practice, in order that the various quantities of solutions and necessary time of action may be seen at a glance.

Operation	Solutions	Time	Remarks
In the Dark Room			
1. Development	A, 2 drams B, 2 " Water 2½ ounces	2½ mins.	All solutions to be 60° to 65° Fahr. Mix developer at last moment.
2. Washing		15 to 20 sec.	
3. Dissolving the deposited image	C, Sufficient to cover well	4 mins.	This bath will do for three plates if treated at one time.
4. Washing		½ min.	
In Daylight			
5. Re-development	D, 3 oz.	3 mins.	Must be done by bright, actinic light, daylight for preference.
6. Washing		½ min.	
7. To oxidize developer	E, 3 oz.	8 to 10 sec.	Wash off quickly or quality of picture will be impaired.
8. Washing		¼ min.	
9. Intensification	F, 3 oz. G, 2 drams	2 to 4 mins.	Intensification is the only personal feature in these manipulations, and may be carried as far as may be judged to be sufficient.
10. Washing		½ min.	
11. Clearing	H, 3 oz.	1 min.	Use a second bath if green fog appears on film.
12. Washing		½ min.	Care must be taken that no acid permanganate remains in the film, or it will act with the hypo as a reducer.
13. Fixing	I, Sufficient to cover well	2 mins.	In hot weather a few grains per oz. of chrome alum may with advantage be added to the hypo solution.
14. Washing	The above quantities are sufficient for a 5 x 7 plate	5 mins.	Although the time of washing seems very short, it has been proven to be sufficient. It is found that over washing reduces the colors and causes a pink tone to develop all over the picture.

1062. When Autochrome plates first came upon the market, they were pre-disposed to frill immediately after being treated with the C solution; but it would seem that certain improvements in the manufacture have somewhat remedied this evil, for no such trouble has been experienced with later supplies. It will, however, be useful to have the knowledge of a few expedients, which will assist us to remedy the evil to some extent, should it at any time be necessary.

1063. *First.* In the absence of suitable materials and apparatus the following may be tried: Absorb the superfluous moisture from all the edges of the plate, by standing them repeatedly upon a folded piece of absorbent blotting paper, and dry as quickly as possible by waving about in the air, or by placing the plate in a current of cool air until dry. This must be done immediately after the frilling commences—at whatever stage after reversal it may appear. When the film has once dried, frilling is not so likely to recur; but if a little celluloid varnish is painted around the edges of the film before re-wetting, no further trouble may be expected.

1064. *Second.* In a metal dish, melt sufficient resin, one part, and beeswax, two parts, to cover the bottom of the dish to the depth of one-fourth inch. Before commencing to develop, dip the edges of the Autochrome plate into this wax bath, and allow to set before pouring on developer.

1065. *Third.* Fix the plate in a " whirler " and revolve rapidly until dry, after which coat the edges with a varnish of wax or celluloid.

Alternative Methods of Development.

1066. One of the great disadvantages in working the Lumière method is that one cannot examine the plate during the first development, at least not with the ordinary light of the dark-room.

1067. **Rodinal for Development.** — The following method makes it possible to work in a deep, ruby light, if the plate is kept in the dark for the first two minutes, and then

brought nearer to the light, so that the direct rays do not fall upon it, keeping it covered up as much as possible:

1068. **First Developer.**—

Rodinal	1 part
Water	10 parts

1069. A few drops of 10 per cent. potassium bromide may be necessary in developing landscapes or objects in which light colors predominate.

1070. Development should continue until only the deepest shadows show white on the surface of the plate. It cannot be inspected by looking through it. Wash for one minute, and reverse by immersion in Lumière C Solution for four minutes as directed in the previous *Table of Manipulations,* afterward washing for one minute and then covering the plate with the following re-developer:

Rodinal	1 part
Water	20 parts

1071. Now, take the dish into strong daylight and continue to develop until the image is sufficiently brilliant, afterward washing for two minutes and drying, no fixing being necessary.

1072. **Two Amidol Developers.**—Another method offers still greater advantages, in that after the plate has been treated in the first developer in darkness for two minutes, it may be treated as an ordinary plate until fully developed. Amidol having the faculty for destroying all the color sensitiveness of the plate, the red light does not affect it materially. The following method will be found to work very successfully.

1073. For full exposures use the following developer:

Water	10 ozs.
Commercial Liquid Sodium Bisulphite	3 drs.
Sodium Sulphite	300 grs.
Potassium Bromide, 10 per cent. Solution	1½ drs.
Amidol	50 grs.

This is a very slow developer and its action can easily be watched.

1074. If it is desirable to shorten the time of development, or in the case of probable under-exposure, the following formula will be more suitable, and the plate may be treated with it after it has been partially developed in the above:

Water .....10 ozs.
Sodium Sulphite .....300 grs.
Potassium Bromide, 10 per cent. Solution..50 minims
Amidol .....50 grs.
If dry sulphite is used, half the quantity will suffice.

1075. Development should be carried as far as possible without veiling over the deepest shadows. Reversal with the Lumière C solution, subsequent washing, and re-development with D solution (as directed in the *Table of Manipulation*) and final washing for two minutes complete the picture. As an alternative, a 1 in 20 rodinal solution may be used for re-development, if desired. The above amidol developing formulæ will be found to be invaluable, especially when developing plates which have received other than normal exposures.

1076. **An Experiment.**—When the Autochrome plate has been developed in rodinal, fully reversed with C solution and washed, it may be immersed for one minute in a solution of commercial liquid sodium bisulphite, washed for one minute, and dried in bright daylight, when the undeveloped positive image will quickly assume a deep brown tint, and the picture is thus finished without further treatment. But, if necessary, local re-development may be attempted by means of a camel's-hair brush and a strong metol developer.

CHAPTER LII.

Color Photography.

Part II.

Autochromes from Autochromes.

General Pointers.

1077. **Autochromes from Autochromes.**—It is often desirable to make duplicates of the choicest of our Autochrome results, first, on account of the intrinsic value of the original, and second, because a copy may be sufficiently satisfactory to loan out to societies and individuals, with the possibility of accidents occurring. For more than one reason, duplicates cannot be equal to the originals, but the following method will give the best possible results: Fix up a camera so that the lens points toward a bright, north, white-clouded sky. Extend the front to the focal-length of the lens, stop the latter down to f. 22 and adjust the light filter. In the plate-holder place the Autochrome picture you wish to duplicate, glass side down, and after cleaning the glass, place the Autochrome plate, glass side down, upon the film of the picture in the holder, backing up with a black velvet-covered card. Put the holder into the camera and expose. The exposure will be about ten times the normal and must be ascertained by experiment. The subsequent operation will be as for direct pictures.

1078. **Incorrect Color Rendering.**—When a general blue tone pervades the whole of an Autochrome picture, the cause must be looked for in more than one direction. In the first place, it may be the result of under-exposure, or what is quite as likely, it may be found that the yellow absorption filter has somewhat faded by exposure to light. On the other hand, there may be a predominence of blue

in the light which may not be apparent to the eye; and on cloudless summer days, and at coast towns, this will often be the cause of the excess of blue in the picture. It is advisable to have a deeper yellow screen for use under such conditions; or, as an alternative, a supplementary screen made by dyeing a fixed-out transparency plate in picric acid may be used, together with the normal screen, and the exposure increased accordingly, say two to four times. Blue fog will also develop onto the picture if a trace of white light is allowed to get into the room, especially from under the door. If any other light than that actually passing through the filter reaches the plate during exposure, blue tones will result. A strip of black velvet should be fastened around the filter carrier when fixed in front of the camera, in order to avoid any light creeping between the filter and the lens.

1079. **Flat and Foggy Autochromes** may be improved by treating in the following manner: Put the Autochrome into a bath of hypo ½ ounce, water 6 ounces; soak for one minute, and then add to the hypo solution one ounce of a 3 per cent. solution of potassium ferricyanide. Allow this mixture to act upon the Autochrome picture for one minute, wash for a minute, and examine in a strong light. If not sufficiently cleared, continue the action of the hypo-ferricyanide solution another minute or two, afterward washing for five minutes. The picture must now be re-intensified with F and G solutions, cleared in H solution, and washed. Re-fixing is not necessary.

1080. **Reducing Density.**—Over-intensified or otherwise dense results may be somewhat reduced by immersing for a few minutes in a fresh acid hypo solution. The following method is also successful:

1081. **Persulphate Reducer.**—

Ammonium Persulphate	1 dr.
Water	4 ozs.

1082. Immerse the Autochrome, without previous wetting, in the above solution, and watch the action care-

THE DANCE.

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Gertrude Käsebier

fully. Before reduction has been carried quite as far as is desired, transfer to a 5 per cent. sodium sulphite bath for two minutes. Wash for two minutes, and dry.

1083. **Improving Faulty Coloring.**—A solution of yellow or orange dye will improve the color of blue-toned pictures; and green dye will give a more pleasing tone to pictures in which much pink prevails through over-exposure.

1084. **Autochromes by Artificial Light.**—Still life studies may be made successfully by means of artificial light, but the following modifications in the use of the yellow-light filter must be made:

1085. If the light employed is a yellow coal-gas flame, the yellow screen should only be used for half the time of exposure. If incandescent electric bulb, the screen may be used for three parts of the time and, generally speaking, with incandescent gas, with a new mantle, the screen must be used for the whole of the time. Exposure will, of course, depend upon the amount of illumination employed, but will not be less than an hour, at f. 8, under the most favorable circumstances.

1086. **Varnishing and Finishing.**—All Autochromes should be varnished as soon as dry, using either the celluloid or gum varnishes suggested; and they should then be bound up with a cover-glass to avoid injury to the delicate film.

1087. **Lantern Projections.**—Autochromes intended for exhibition in an optical lantern should be kept as thin and clear as possible, consistent with correct color rendering.

1089. If, during exhibition, the lantern objective is capped between each picture, the results will appear on the screen with greater apparent brilliancy. If the slides are allowed to get hot in the lantern, the film of the picture will crack up and the value of the slide be impaired.

CHAPTER LIII.

Color Photography.

Part III.

Autochrome Process—Difficulties.

1090. **Under-Exposure.**—An under-exposed plate, when out of the reversing solution **C**, after the first development, shows a dark image lacking detail in the shadows. The result is the same as in the case of an ordinary positive from an under-exposed negative.

1091. **Over-Exposure.**—An over-exposed plate, when out of the reversing solution **C** shows a very thin and flat image. The result is the same as in the case of an ordinary positive from an over-exposed negative. The image may be improved as regards contrasts, by successive intensifications with solutions **F** and **G.**

1092. **Blue Image.**—When the image shows a dominant blue color it means either that the ray filter has not been correctly placed in position, so that a portion of the light fails to go through it before reaching the sensitive film; or that the dark-room, camera, or plate holder was not perfectly light-tight.

1093. **White Light** reaching the back of the plate causes a kind of blue violet veil which persists in the shadows of the image. This blue coloration may also occur when the ray filter is placed in front of the lens and does not tightly fit the mount, and also when the ray filter, either placed in front of or behind the lens, is too small to cover the lens tube entirely.

1094. **Fog.**—When the dark-room light is not perfectly safe, it may cause fog by acting on the sensitive film either directly or through the glass and the layer of colored starch grains. In the first case, a black fog appears, which affects the brilliancy of the image; in the second case, the red light passing through the red-colored starch grains causes a red fog particularly visible in the shadows, but somewhat weakened in the high-lights.

1095. **Black Streaks.**—When the immersion in the reversing permanganate solution **C** is not sufficient, some particles of re-

duced silver may not be dissolved. These parts are darkened when intensification takes place and then appear as irregular black streaks.

1096. **Reduction of the Image When Fixing.**—When the second development is not sufficient (developer too weak or its action not sufficiently prolonged) the colored image is weak and weakens still more in fixing. The same trouble occurs when the second development is not carried out by full daylight.

1097. **Details Eaten Away.**—When the plate is immersed too long a time in solution **E**, or when said solution is too highly concentrated, details in high-lights may be eaten away.

1098. **Dichroic Fog.**—When the finished image shows dichroic fog in the high-lights, the plate ought to be treated again in the permanganate solution **H** and afterwards in the hypo solution **I**.

1099. **Decrease in the Brilliancy of Colors and General Reddish Tinge.**—When final washing is too long (longer than five minutes in running water) the brilliancy of colors is reduced and a reddish discoloration appears all over the high-lights.

1100. **Frilling** occurs when the outside temperature is too high or when there is too great a difference between the temperature of the solution and that of the washing water. The temperature of the different solutions ought not to exceed 65° F (18° C), and the water should be of about the same temperature. This trouble may be overcome by the use of chrome alum as directed. It will be found of advantage to cool the solutions and the trays before using them.

1101. **Black Spots.**—The manufacture of "Autochrome" plates is extremely delicate, and it is sometimes impossible to get them perfectly free from small black spots. These can be retouched with a fine camel's hair pencil soaked in the permanganate solution **C**. After such retouching the plate should be rinsed, immersed in the fixing bath, washed, and dried again.

1102. **White Spots.**—These can be retouched, as usual, with India ink, graphite, or any other black pigment, diluted in gum arabic. **Retouching should be done after varnishing.**

1103. **Scratches.**—The sensitive film is extremely delicate. For this reason the undue pressure or friction of black cardboard, springs, etc., may cause scratches and even minute ruptures of the varnish pellicle under the sensitive film. Where the film is ruptured green patches will appear.

1104. **Stains on the Fingers,** caused by the intensifying solution, may be easily removed by soaking fingers alternately in solutions **C** and **I**.

CHAPTER LIV.

Color Photography.

1909 Supplement.

Autochrome Process.

Simplified Method of Development.

1105. The only difficulty in the original method of developing Autochrome plates was the impossibility of correcting errors in exposure by modifying the composition of the first developer and time of development. To overcome this difficulty the Lumiere people have experimented to secure a dark-room illumination of such low actinism as to permit to follow, with due precautions, the appearance of the image during development without fear of fogging.

1106. Another marked improvement is the new developer, which is susceptible of being modified during development according to the time of the appearance of the image, which time, given the same developer at the same temperature, is governed by the exposure.

1107. The developer, formula for which follows, when poured on the plates, greatly reduces their sensitiveness to the radiations of the new lighting, and makes it possible to watch the appearance of the image, and, according to the time of appearance, modifies the composition of the developer and regulates the time of development.

1108. **Lighting of the Dark-room.** A 16-candle power electric bulb, gas jet, kerosene lamp or candle may be used as the source of light. It should be enclosed in a lantern having only one illuminating surface, composed of sheets

of "Virida" papers held between two sheets of plain glass. The "Virida" papers are specially prepared by the Lumiere people for this purpose.

1109. With a bright source of light, such as a 16-candle power electric bulb or gas jet, superpose two sheets of *green* paper and three of *yellow,* the latter being on the inside. With a weak source, such as oil lamp or candle, two sheets of *green* and two of *yellow* are sufficient. The light passing through "Virida" papers, although highly inactinic, gives a fairly good illumination. It is imperative that the lantern be perfectly light-tight and only emit light filtered through the "Virida" papers.

1110. We call *special attention* to the fact that when entering a weakly lighted dark-room, the eyes still vividly impressed with the daylight, take a little time to become accustomed to the new feeble illumination. It is therefore specially advisable to wait a few minutes before beginning development, otherwise one may not properly judge the exact time of appearance of the image.

1111. **Simplified Development.** By the new simplified method of manipulation the number of solutions have been reduced from six to two, and the operations for the whole process of development to three only. For the new process prepare the following:

1112—Metoquinon Stock Solution.

	Apoth.
Water (distilled preferred)	30 ozs.
Metoquinon (Lumiere's)	3½ dr.
Sodium Sulphite (dry)	3 ozs.
Ammonia (density 0.923)	1 oz.
Potassium Bromide	1½ dr.

Dissolve the metoquinon first in luke warm water, and then the other chemicals in order given.

1113. The two solutions to be used for this simplified method of development are:

NO. 1 DEVELOPER.

Metoquinon Stock Solution	6 dr.
Water	3 oz.

No. 2 or C Reversing Solution.

Water	50 ozs.
Potassium Permanganate	50 grs.
Sulphuric Acid	4 drs.

This solution keeps better made up in two parts:

Water	25 ozs.
Potassium Permanganate	50 grs.

Ca

C*b* Water .....25 ozs.
Sulphuric Acid ..... 4 drs.

The reversing solution is then made up at any time for use, by mixing equal quantities of C*a* and C*b*.

1114. **First Development.** After exposure on the glass side, using the special ray filter as explained in paragraph 1036, the plate is developed in *Solution No. 1,* using 3½ ozs. for a 5 x 7 plate. For a correctly exposed plate development should last exactly 2½ minutes, the temperature of the solution being at 60° Fahr.

1115. **Examining Plate During Development.** When development has proceeded for 25 to 30 seconds, the plate may safely be examined by the light of a lantern fitted with the "Virida" papers. *If the image shows over-exposure the duration of development should be reduced; increase the time of development for under-exposure.*

1116. **Reversing the Image.** When development is complete quickly rinse the plate; then place it in *Solution No. 2* and carry the tray out *in full daylight.* The plate clears progressively, showing the colors by transparency. The complete clearing takes 3 to 4 minutes. Then the plate is rinsed in running water for 30 to 40 seconds.

1117. **Avoid Frilling.** In order to avoid any chance of frilling in hot weather, it is a good precaution to immerse the plate after reversal, for 2 minutes, in a 1% chrome alum solution.

Water .....10 ozs.
Chrome Alum .....50 grs.

1118. **Second Development.** After a brief rinsing the plate is again developed (still in full daylight) in the same solution, *No. 1,* in which the first development took place, which solution should be kept in the tray for this object without any special precaution. The development should be prolonged for *3 to 4 minutes* until the white parts of the image have completely turned black; then rinse the plate for *3 to 4 minutes* in running water,, place to dry, without *fixing,* and varnish.

1119. **Intensifying.** When, owing to over-exposure, the image is too light and lacks vigor, it can be improved by intensification after the second development. In this intensifier use the formula given in paragraph 1049.

Solution **F** ..... 3 ozs.
Solution **G** ..... 2½ drs.

1120. Immerse plate and follow intensification by looking through it, from time to time, by transmitted light. As soon as the solution becomes yellow and muddy it must be thrown away and replaced. Intensification is generally complete before the discoloration appears, but if not, a fresh solution is to be used. Before proceeding to this second intensification the plate should be rinsed briefly, then immersed for a few seconds in solution **E** and rinsed again. During intensification the whites may turn yellow, but any discoloration is entirely removed in the clearing solution.

1121. **Clearing.**—When intensification is found to be complete, rinse the plate, for a few seconds, in running water, and immerse them from 30 seconds to 1 minute in permanganate solution **H,** (clearing solution) which *does not contain any sulphuric acid.* When out of the solution the plate shows light yellow stains. These will disappear in the fixing solution, owing to the clearing action of sodium bisulphite, *which chemical should not be omitted.*

1122. **Fixing.**—Although unnecessary to fix the autochrome plate when the simplified method of development is employed, yet it is necessary to fix it after intensification. *This is an absolute necessity.* After a brief washing, fix in the acid hypo solution **I,** for *about 2 minutes.* If the intensity of the image shows any reduction it means that the second development has not been sufficient.

1123. **Washing.**—*Four to five minutes* washing in running water is sufficient to eliminate all traces of hypo from the sensitive film, which is extremely thin. When the whites of the image show a light yellow discoloration, this can be removed by a fresh immersion in solution **H,** followed by another in solution **I.**

1124. **Drying.**—The plate is finally drained and dried, *as quickly as possible,* in a well ventilated room, at a temperature not exceeding 70° Fahr.

1125. **Varnishing.**—When drying is complete it is advisable to varnish the plate in order to increase the brilliancy of the image and insure its preservation. This must be done with varnish **J,** *no other,* which is applied in the usual way.

CAUTIONS.

1126. **Rubbing Film.**—*Never rub* the sensitive film when wet, as it is extremely delicate.

1127. **Don't Use Alcohol.**—*Never use alcohol* in any manipulation of Autochrome plates, as the color will disappear entirely.

1128. **Trays.**—It is advisable to use *glass trays* in preference to porcelain ones, as the latter are liable to crack and thus become difficult to keep clean.

1129. **Time Limit for Use.**—*Autochrome plates* keep their qualities for a few months, provided they are protected from dampness and excessive heat. On each box is stamped the *practical limit for use.*

1130. **Delaying Final Development.**—If for any reason it is thought advisable not to complete the development of an autochrome plate at once, it can be discontinued after the first development and reversing of the image in Solution No. 2, or C. Then, after washing, the plate may be *left in the dark,* and the development completed several days later. The operations such as intensifying may also be discontinued after the second development. This will be found advantageous in warm weather, as the film becomes harder after the first drying.

1131. **Time Development for the Correction of Errors in Exposure.**—The preceding method of developing for a fixed time applies only to correctly exposed plates; in case of *over-exposure* the details may be found eaten away; in case of *under-exposure* the image may be under-developed and too dense. The following method overcomes this difficulty by allowing of regulating the duration of development according to the time of appearance of the first outlines of the image in a diluted developing solution. The dark-room light should be fitted with "Virida" papers, to permit of following the appearance of the image.

1132. **To develop a 5x7 plate,** place within handy reach two graduates of different sizes; one containing ¾ oz. of Metoquinon Stock Solution, the other 2¼ ozs. of this same solution.

Pour into the developing tray:

Water	3 ozs.
Metoquinon Stock Solution	¼ oz.

(Temperature 60° F.)

Immerse the plate in this solution, starting at the same time to count seconds until the appearance of the outlines of the image (disregarding the sky). As soon as they appear, keep on counting and add to the developer: ¾ oz. of Metoquinon Stock Solution if the image appears before 40 seconds, or 2¼ ozs. if

the image appears after 40 seconds. Then continue developing for the total length of time given in the following table. The Lumiere people supply this table on transparent paper, which can be glued to the glass of the dark-room lantern, the light of which is strong enough to allow of reading clearly the directions:

1133.

Time of appearance of first outlines of image disregarding sky.	Quantity of Metoquinon Stock Solution to be added after image appears.	Total duration of development including time of appearance of image.	
Seconds.	Ounces.	Minutes.	Seconds.
12 to 14	¾	1	15
15 to 17	¾	1	45
18 to 21	¾	2	15
22 to 27	¾	3	15
28 to 33	¾	3	30
34 to 39	¾	4	30
40 to 47	2¼	3	—
Over 47	2¼	4	—

1134. For a 4x5 or smaller plate use half of all the above quantities. The other operations—reversal of the image, and second development—should be carried on as explained before.

1135. *The improvements made in the manufacture of Autochrome plates, which allow the use of this simplified method, do not interfere in any way with the use of the previous method of pyro development.*

CHAPTER LV.

Color Photography.

Part IV.

Three-Color Photography.

1136. **The Theory.**—The beautiful colors of the spectrum demonstrate to us that the composition of white light is not simple, but a combination of various colored rays. This being so, it is clear that these rays may be divided into series and means employed by which they may be isolated one series from another. This is briefly the root idea of *Three-Color Photography.*

1137. The visible spectrum is divided into three parts by means of light filters, each of which absorb all the colored rays of one series. The light filters employed consist of dyed gelatin or other celluloid between two glasses; and the colors employed are respectively red, green and blue-violet. The red filter has the faculty for absorbing all the blue series of rays, the green filter absorbs all the red series, and the blue-violet filter all the yellow series of rays in the light. That is to say, no yellow rays can pass through the blue-violet filter; neither can any red rays pass through the green filter, or blue rays through the red filter. Therefore, as only the rays passing through the light filters to the photographic plate can have any effect upon the sensitive surface, it follows that the absorbed colors would appear upon the developed negatives in various degrees of transparency, and that they would each print black upon an ordinary monochrome printing basis.

1138. Instead of printing in black, however, if we make from each negative a transparent print of each of the colors represented by the absorption of our filters, *i. e.*,

red, yellow and blue, we are able to reconstruct the colors of nature by superimposing the three prints one over the other, the transparency of each allowing the necessary shades of the lower prints to be reflected through the top one, so presenting to the eye all the various combinations of colors and tints which are seen in the objects photographed.

1139. **The Light Filters.**—Before three-color work can be attempted, a set of three filters must be obtained, either from one of the various commercial sources, or by home construction; and for the latter several methods will now be given.

1140. **Requisites for Home-Made Filters.**—A number of carefully selected squares of thin glass all cut to the desired size, usually 2 to 3 inches square; a supply of hard photographic gelatin of good quality; some fresh Canada balsam; six small stoppered bottles; three larger ones; a few ounces of alcohol; and a color chart, consisting of squares of colored paper, pasted onto a piece of cardboard. The following colors are most useful for the purpose: Blue, scarlet, yellow, green, orange, and purple.

1141. Obtain a small quantity of each of the following dyes, which are specially prepared for photographic purposes: Victoria blue, Naphthol green, New Rapid Filter green, Filter Yellow K, Rose Bengal. If necessary, Brilliant Acid green may be substituted for Rapid Filter green.

1142. *Make 1-100 alcohol stock solutions of all the dyes.* This is done by dissolving 10 grains of the dye in 2 ounces of alcohol. *Keep the bottles well stoppered and distinctly labeled.*

1143. Take one-half ounce of gelatin and soak for three hours in cold water. Then, with several changes, carefully wash the viscous mass, in order to free it of any foreign matter that may affect the dyes. Heat in a water bath until dissolved; make up the resulting solution to five ounces with hot water, and filter through a wad of cotton-wool previously wet in boiling water.

1144. Carefully clean a number of selected glasses

with alcohol, taking every precaution to avoid dust particles settling upon them afterward.

1145. **Coating.**—Now we are ready to coat the glasses with the plain gelatin. This is best done by laying the glass down upon a leveled surface. The writer prefers to use drinking tumblers, turned upside down, for the purpose, as these are easily leveled up with the help of a small spirit level. The glass to be coated should be slightly heated, and then the hot gelatin poured in a pool in the center, quickly flowing out to the corners either by tilting from corner to corner, or by assisting with a strip of glass. The coated plate is then placed upon the leveled tumbler to cool and set, after which it may be put into a rack to dry.

1146. **Dyeing.**—The following dye mixtures must now be prepared:

1147. **Red Filter Dye Bath.—**

Rose Bengal, Stock Solution .....1 part
Rapid Filter K, Stock Solution .....1 part
Distilled Water .....6 parts

1148. **Green Filter Dye Bath.—**

New Rapid Filter Green, Stock Solution .....2 parts
Naphthol Green, Stock Solution .....2 parts
Rapid Filter K, Stock Solution .....1 part
Distilled Water .....100 parts

1149. **Violet Filter Dye Bath.—**

Victoria Blue, Stock Solution .....1 part
Distilled Water .....8 parts

To this must be added Rose Bengal, drop by drop, shaking up and examining between each drop or two until the blue color is changed to a slight violet.

1150. Now, into a suitable porcelain or glass dish, pour one of the dye baths and immerse into it one of the dried gelatin-coated glasses. In about five minutes, it should be taken out and washed for one minute, and a second plate

immersed in the dye bath for a minute or two, and then washed.

1151. The color chart will now be required for visual testing of the absorption of our filter (it being assumed that the operator has correct color vision). Take the two dyed plates and, holding them slightly apart, bring them close to the eyes and look through them at the color chart, in a good light. This can only be done successfully by daylight. If it is the red filter we are making, on looking through it at the chart the blue and green patches should appear black; but, if such is not the case, then the palest-tinted plate should be replaced in the dye bath, and the testing repeated after a few minutes. If the orange and scarlet patches of the chart appear exactly the same depth of color, then the filter is too deeply dyed.

1152. When visually testing the green filter, the blue and purple patches should appear black, the scarlet nearly so, and the green patch should appear neutral gray. A slight trace of red passing through the green filter will not signify.

1153. When testing the violet filter, the yellow, orange, red, and green patches should appear black and the blue and purple, a grayish blue. The main purpose should be to keep the filters as pale as possible, in order that the exposures through them shall not be unduly long. After drying they should again be tested for absorption, and if satisfactory, they will be ready to seal together with Canada balsam. This is done by melting the balsam in a small lipped vessel, and pouring a quantity on to one of the gelatin surfaces of the filter, bringing the other plate quickly into position upon it, and squeezing the balsam out to the edges. After allowing to set for a day or two, they may be bound around the edges with any suitable binding paper or tape, and are then ready for use.

1154. In making these filters, one gelatin surface only may be dyed if desired, or fixed-out transparency plates may take the place of home-coated plates.

1155. **Another Method of Making Light Filters.**—Use

a 10 per cent. solution of gelatin instead of the distilled water given in the filter dye-bath of the first method. The following are the quantities of gelatin solution necessary for the given quantities of dye solutions:

For the Red Filter .....10 parts
For the Green Filter .....230 parts
For the Violet Filter .....20 parts

The gelatin and dye solutions must be thoroughly mixed together.

1156. The method of coating plates with this predyed gelatin will be the same as with the plain gelatin; but it will be seen that the absorption of the filters made by this method will depend upon the amount of gelatin solution which is coated onto the plates. Thick and thin coatings may be made, and the most suitable pairs of plates selected, by testing after they are dry.

1157. **Color Sensitizing of Plates.**—Although there are several brands of color sensitive plates on the market, a description of the method of home sensitizing will be useful to the enthusiastic three-color worker. In selecting a stock-manufactured dry plate for the purpose of making the same color sensitive, the first consideration must be that the plate must develop with a minimum of chemical fog. There may be many makes of American plates eminently suitable from this point of view, but the only one the writer has had the opportunity of thoroughly testing is the Seed No. 26, which, with care, gives excellent results. Seed Gilt Edge was not found so satisfactory for the purpose.

1158. **The Sensitizers.**—The scientific principles involved in sensitometry are quite outside the province of this article, it being proposed only to deal with a practical method of making it possible to make ordinary dry plates sensitive to all the colors of the visible spectrum.

1159. In the first place the following dyes must be procured:

Pinacyanol (Hœchst) .....1/1000 solution
Pinaverdol (Hœchst) .....1/1000 solution

1160. With these make up the following bath:

Pinacyanol, Stock Solution	2 parts
Pinaverdol, Stock Solution	3 parts
Methyl Alcohol	125 parts
Distilled Water	250 parts

1161. Before commencing to bathe the plates, suitable provision must be made for drying them. For this purpose employ either a drying cupboard, through which a current of air is passed, or one in which a quantity of calcium chloride or quicklime is placed in a dish. A current of warm air is the best means of drying.

1162. The ordinary red light of the dark-room may be used for the preliminary preparations. Well wash and dry a flat porcelain dish, large enough to hold two or three plates more than it is proposed to sensitize at one time. Into this lay the plates, after carefully dusting. Now, tilt the dish so that the empty end is down, and into this pour the sensitizing dye-bath; then tilt the dish back so that the solution flows in one sweep over the plates.

1163. Immediately it is seen that the plates are covered with solution; put out the red light, and proceed, in total darkness, to gently rock the dish, in order that the dye may act equally upon each of the plates in it. Bathe for five minutes and then stand the plates in a draining rack, and put them into a cupboard or dark box to drain while other plates are being bathed.

1164. As these plates are now panchromatic, no red light must be used with them after they have once been wet with the dye solution; but a deep green light, if carefully tested for safety, may with caution be employed. After the plates are dry, they should be backed with a mixture of vegetable black and dextrine. No red backing must be used.

1165. **Alternative Panchromatic Sensitizers.—**

1.

Orthochrome T (Hœchst), 1/1000	1 part
Water	500 parts

2.

Homocol (Bayer), 1/1000 ..... 1 part
Water ..... 150 parts

3.

Pinachrome (Hœchst), 1/1000 ..... 1 part
Water ..... 500 parts

1166. In either case a proportion of Methyl Alcohol may be added to assist the drying, making a similar reduction in the amount of water used.

1167. The plates may be bathed in alcohol after they have been allowed to drain for half an hour. Two alcohol baths should be used, allowing the plate to stay five minutes in the first, and then transferring to the cleaner bath for two minutes. The surface of the plate may then be carefully wiped with a piece of soft, well-washed muslin. This will help to avoid markings which may otherwise occur. These plates should also be "backed" with black backing.

1168. **The Camera, Etc.**—For three-color work certain modifications are necessary in the camera. Various forms have been devised, some of which make it possible to expose the three plates at once, but these latter have not been proven an unqualified success.

1169. Any ordinary stand camera may be made to do good service for this work. In the first place, a carrier arrangement must be provided for the light filters, so that the three filters may be framed up side by side, thus making it possible to pass them in succession either behind or in front of the lens. The writer favors the former as the most suitable position for them.

1170. **Arrangement of Filters.**—It is usual to frame up the filters in the order of red, green, violet, and also to expose through them in the same order.

1171. For still-life work or the copying of paintings, the ordinary plate-holders will be quite suitable; but for portraiture, and other work requiring a quick change of the plates, a repeating-back arrangement should be provided for the camera, with a plate-holder in which the three neces-

sary plates may be placed side by side. A means of quickly moving the plate-holder and filter-carrier, such as a coarse rack and pinion, would greatly facilitate the making of short combinations of exposures.

1172. **The Negatives.**—Having everything ready for practical testing, the ratio of the exposure of the plates must be discovered. If commercial bathed plates and light filters are being used, the exposure ratio for the three filters should be ascertained from the manufacturers, if it is not indicated on the plate package, or on an enclosed card.

1173. **Relative Exposures.**—When using plates home bathed with Pinacyanol-Pinaverdol take the following ratio as a rough test: Red, 2; green, 2; blue, 1. Thus, the blue will require about six times the exposure the plate would require without a screen, and the red and green twice as much as the blue. Put three plates into the plate-holder, carefully marking them 1, 2, 3, for future indication, and upon a color chart, which should include white and black patches, make strip exposures through each of the filters, keeping a careful record, and numbering each item. It will be necessary to fit a piece of cardboard into the back of the camera, in the center of which a half-inch slit has been cut, and through this make the exposure. Make all the exposures through one filter onto one plate, and after development compare the results. The strips which show the white patch of equal density, and the black patch of equal transparency on each plate, having received the correct exposures.

1174. On the negative made through the *red filter*, the red patch of the chart will be as opaque as the white patch, and the blue transparent. The *green filter* negative will have the red patch transparent and the blue and green opaque; and the *blue filter* negative will have the yellow patch transparent, and the red and blue opaque. Any other colors will be in various degrees of opacity in each case, according to the mixtures in their composition.

1175. **Development.**—The most suitable developer for bathed plates is one of Metol-Hydroquinon. Any developer

which would be likely to stain the film would probably alter the color values of the print.

1176. **Portraits.**—The following formula has been found perfectly satisfactory for portraits and still-life work:

Metol	25 grs.
Hydroquinon	5 grs.
Sodium Sulphite (Cryst.)	6 drs.
Sodium Carbonate (Cryst.)	5 drs.
Water	20 ozs.

For use add an equal volume of water.

1177. **Landscapes.**—For landscape work, the following produces suitable negatives:

Metol	35 grs.
Hydroquinon	10 grs.
Sodium Sulphite (Cryst.)	6 drs.
Sodium Carbonate (Cryst.)	5 drs.
Bromide of Potassium	4 grs.
Water	20 ozs.

For use add an equal volume of water.

1178. These developers must not be used more than once. Development must take place in either total darkness or in the dim light of a special green safe-light. The temperature of the developing solution should be 70° Fahr., and the time of development five minutes.

1179. All the plates must be put into one dish, and the developer flowed evenly over them. Plenty of solution must be employed, or marks may occur on the negative.

1180. Do not clean the backing off the plates until after they are fixed; neither is it necessary to wash the developer off the negatives before fixing; but they must be thoroughly washed, both back and front, afterward.

1181. The best quality negatives are those which would yield a good, though rather flat print on gelatino-chloride printing-out paper.

Color Dyes for filters and sensitizers may be obtained from Victor Koechl & Co., 122 Hudson St., New York City.

CHAPTER LVI.

Color Photography.

Part V.

Three-Color Carbon Process.

1182. The printing process *par excellence* is undoubtedly the carbon process, employing for the purpose either the stripping film of the Rotary Photographic Company, Ltd., or the ordinary carbon tissue which is now supplied, pigmented in suitable colors, by several manufacturers.

1183. After a long and varied experience, the writer gives the first place to the stripping film method; the reasons being that the balancing of the colors during development is more certain; single transfer only is necessary, the final results are more uniform in quality, and the percentage of failure is smaller than when tissue is employed. Therefore, this is the process selected for detailed description.

1184. **The Requisites** for this process are: A supply of tri-color film, bichromate of ammonium, methyl alcohol or methylated spirit, strong liquid ammonia, formalin, pure benzine, thin sheet gelatin, white cotton wool, fluffless blotting paper, pins, and a good, wooden-handled camel's-hair mop-brush, about one and a half inches across the hair when dry; or a " Blanchard " brush, made by tying some flannel onto the end of a strip of glass measuring 6 x 1½ inches.

1185. The stripping film is supplied in packets containing twelve pieces, four of each color necessary—red, yellow and blue—and four pieces of transfer paper. The colored pigments are coated onto a base of thin transparent celluloid, through the back of which the print is made.

1186. **Sensitizing the Films.**—Prepare the following sensitizing bath:

Ammonium Bichromate	2 drs.
Warm Water	2 ozs.

This is best made up in small quantities for immediate use, as the sensitizing qualities of the solution diminish after being made up a few days. For use, a measured quantity is mixed with an equal volume of methylated spirit.

1187. The above sensitizer is suitable for negatives of average density; stronger negatives will require a stronger bath up to 3 drams of bichromate, and weaker negatives a weaker bath, down to 1 dram of bichromate. Negatives requiring a still weaker sensitizer are too thin to give good results, and dense, contrasty negatives are useless for this process.

1188. Before sensitizing, the pigmented surfaces of the films should be carefully rubbed with a soft cloth, to clean off any finger marks.

1189. A film is now laid onto a few thicknesses of blotting paper and fastened down with a pin through each corner. The camel's-hair mop, or Blanchard brush, is well charged with sensitizing solution, which is quickly applied to the film by painting up and down and across. As it is necessary that the film shall be thoroughly saturated, a second brushful of solution may be required. Sensitizing is complete in one minute, and the film should then be put between blotting paper and the superfluous moisture removed from the surface. The film should then be fastened onto a board to dry, a pin being put through each corner.

1190. The sensitizing and drying of films must be done in artificial light, in a well ventilated room. Drying may be assisted by standing the drying boards a few yards away from a fire or radiator, but very quick drying is not advised. The films should be sensitized the evening before they are required for printing, and should be used within twenty-four hours.

1191. Printing.—The dry sensitive films should first

have a soft cloth rubbed over the back of them, in order to remove any trace of sensitizer which may be adhering thereto, and printing proceeded with.

1192. The negatives should be clearly marked with the name of the color in which they are printed, or mistakes will inevitably occur.

The Red-filter negative should be marked Blue printer.
The Green-filter negative should be marked Red printer.
The Violet-filter negative should be marked Yellow printer.

1193. The film is laid onto the negative with the uncoated side downward, so that the printing may take place through the celluloid.

1194. A print meter will assist in making the correct exposure, but the following is a safe and ready guide. The yellow film may be examined by artificial light, and when a faint image of the picture is visible upon it, then the *blue film* is sufficiently printed, and must be immediately transferred to a dish of cold water. The *yellow film* must continue to print until a pale brown image is seen, with a fair amount of contrast. The *red film* will require a little longer time; the average ratio of exposures being: Blue, 1; yellow, 2; red, 3.

1195. Under-exposure must be avoided, as it cannot be remedied in the after treatment, and greatly over-exposed films become so insoluble that they are difficult to develop satisfactorily.

1196. Note that all the exposed films must be transferred to a dish of cold water in artificial light, and after soaking for five minutes, the subsequent operations may be carried on by daylight.

1197. **Development.**—Flat porcelain dishes should be used for the red and blue films, and a black one for the yellow. Fill up the dishes with warm water, 90° Fahr., and immerse the films by sliding under the water; the surface of the film must not be touched with the fingers. When the films have been in the warm water for a few minutes, the dishes may be gently rocked, and the development of the picture watched. If fully exposed, the films will not com-

pletely develop unless the temperature of the water is gradually raised from 110° to 120° Fahr. Water that is too hot for the fingers of the operator will cause the celluloid to kink and the film to be spoiled.

1198. If after fifteen minutes' treatment development does not appear to make progress, a little liquid ammonia should be added to the developing waters. If correctly or slightly under-exposed films are agitated too severely during development, the details of the lighter tones will suffer. When apparently developed, the films should be transferred to a dish of cold water; this will arrest the development and make the films less liable to injury from handling. Having developed the three constituent prints, lay the yellow film on a piece of opal glass, or a sheet of plain glass, with white paper under it. Over the yellow lay the blue film, and on top the red one.

1199. The operator will now be able to judge as to whether development has been sufficient or not. If the print is heavy and dark, then the blue film will require further development; if too brown, probably red, or both yellow and red films are under-developed. The final result should appear to contain a little more yellow than necessary, because on drying the finished picture it is found that the yellow is greatly subdued by the overlying films. Having developed the set of films satisfactorily, pin up each one separately on a line to dry.

1200. **Transferring the Yellow Print.**—When thoroughly dry, soak the yellow print in water at 80° Fahr., for fifteen minutes. The temperature must be kept up during the whole time of soaking. Then, into water at 65° Fahr., immerse a piece of transfer paper, face upward, for one minute, and bring the yellow film into contact with the transfer paper in this water. Lift out immediately and carefully rub down between blotting paper. A cloth is better than a squeegee for this purpose. See that all air-bells are removed, and then hang up to dry.

1201. If the film does not adhere to the paper at the edges, place the print between blotting paper and then be-

tween two glass plates, and stand a seven pound weight upon them for fifteen or twenty minutes.

1202. When the yellow print is thoroughly dry, a pin should be inserted between the celluloid and the paper at one of the edges; draw the pin along to one corner, and then along the second edge. Now, taking the loose corner, slowly strip off the sheet of celluloid. Clean the surface of the yellow print with benzine on a tuft of cotton-wool. Repeated rubbings and turning of the wool will be necessary in order to insure the entire removal of all the rubber solution with which the surface is coated. It is now ready for receiving the blue print upon it.

1203. **The Blue Print.**—First, prepare a 5 per cent. solution of thin sheet gelatin, which should be filtered before use. Place the blue film in water at a temperature of 70° Fahr., and after two minutes, place the yellow print in water 65° Fahr., until limp. Lift the latter out onto a folded piece of blotting paper, and pour over it sufficient gelatin solution to cover. Now take the blue film and superimpose over the yellow, carefully rubbing out all air-bells and superfluous gelatin. It is, of course, important that perfect registration of the two prints shall be secured. If the blue print is smaller than the yellow it may be expanded by placing it into hotter water. The combination print must be dried, the celluloid stripped from it, and the surface cleaned exactly as directed for the yellow print.

1204. **The Red Print.**—The green print must now be immersed in a 5 per cent. solution of formalin for one minute, and washed for three minutes in cold water. Having liquefied the gelatin cementing solution (or made up fresh), proceed in the same way as with the blue print, but do not soak the red film—merely dip into the water and immediately bring it into position over the green print. If too small expand by soaking for a minute. When quite dry and the celluloid removed, clean the surface and the print is ready for mounting.

1205. The finished print may be spotted with suitable colored dyes and, if desired, may be given greater bril-

liancy by varnishing with a very thin celluloid varnish, which should be flowed over as when varnishing a negative; or the surface may be matted before the print is mounted, by squeegeeing to a collodionized matt opal, or ground-glass, in the well-known manner.

Notes.

1206. When sensitizing the films, should patches appear to be greasy and refuse to take up the solution, rub over quickly with a small wad of cotton-wool.

1207. It is frequently advisable to sensitize the red film with a weaker sensitizing solution than that used for the yellow and blue films.

1208. If no formalin is to be obtained for treating the green print, use a strong solution of chrome alum for the purpose.

1209. Flat and full tri-color prints indicate that the sensitizer used for the films was too strong.

1210. Prints in which the colors of the films employed are clearly defined, there being a lack of correct blending, indicate either that the sensitizer used was too weak or the negatives too strong.

1211. Finished prints should be mounted under cut-out mounts, so that the surface may not touch the glass, as any moisture condensing on the latter would spoil the print.

CHAPTER LVII.

Color Photography.

Part VI.

Three-Color Gum Process.

1212. Very soft and artistic three-color prints may be made by the gum process, and as it is not a difficult process to work, and further is most economical, it is especially recommended for experiment.

1213. **Materials, Etc., Necessary.**—A supply of ferric citrate of ammonium, ferricyanide of potassium, and bichromate of potassium. The following ordinary artists' moist water-colors, in tubes: Gamboge, carmine and crimson lake. A bottle of office gum, some gelatin, a good quality cartridge paper—smooth for fine detail and rough for broad effects; two flat camel's-hair brushes—one an inch wide and the other one and a half inches.

1214. **Sensitizer.**—Make up the following sensitizer:

1.

Ferric Citrate of Ammonia	6 drs.
Water	5 ozs.

2.

Potassium Ferricyanide	½ oz.
Water	5 ozs.

For use, mix equal parts of 1 and 2 and filter.

1215. Cut the cartridge paper into convenient sizes, and well coat with the sensitizing solution, by brushing on with a large flat camel's-hair brush. Care should be taken that, as far as possible, all brush marks are eliminated.

Hang in the dark to dry. When dry, print under the *blue printing negative* until the highest lights are well tinted. Wash in cold water until the highest light is clean, then hang up to dry.

1216. **Gelatin Coating.**—Prepare a one per cent. solution of gelatin, and with this coat the surface of the dry blue print and again dry.

1217. **Gum Coating.**—Now, of office gum and 10 per cent. solution of potassium bichromate take equal parts. Into this thoroughly mix a sufficient quantity of gamboge moist water color to make of the consistency of milk, and, in artificial light, paint evenly over the sized blue print, avoiding streaks. When thoroughly dry, bring carefully into register on the *yellow negative* and print until the image is clearly discerned of a brown color. Then float the print face downward in cold water, and let development proceed automatically. When sufficiently developed, hang up again to dry.

1218. Give the dry print another coat of gelatin size and again dry. Then prepare a red coating solution as follows: 1 part gum, 1 part 10 per cent. potassium bichromate solution, and adding about equal parts of crimson lake and carmine make the mixture about the same consistency as milk.

1219. Coat the *green print* and expose as before; but as the printing of the final coating cannot be easily judged on examination, a piece of chloride paper should be put under a negative of similar density, and when this is printed to the usual printing depth, the gum print will have had sufficient exposure. Develop as directed for the green print.

Notes.

1220. The coatings of bichromated pigments should not be heavier than the deepest shadow of the blue print base.

1221. If a superior office gum is not obtainable, soak one ounce of good gum arabic in two ounces of cold water.

PORTRAIT STUDY.

Study No. 57 — A. F. Bradley

With occasional stirrings, in two or three days it will have thoroughly dissolved and should be strained free from any insoluble particles. This thick solution will keep well, but it must be broken down a little with water for use.

1222. If it is desirable to use cake colors, put into a small open vessel, such as an egg cup, and just cover the pigment with water. After standing for a few days it is ready for use.

1223. The blue base print may be printed in gum if preferred, using Prussian blue for pigmenting.

1224. Registration is easily accomplished by holding the print and negative up to a bright light and looking through them.

CHAPTER LVIII.

Color Photography.

Part VII.

The "Pinatype" Three-Color Process.

1225. "Pinatype" is a process patented by Meister Lucius & Bruning, Hoechst on Main, Germany. The process is based upon the fact that bichromated gelatin exposed to the light, under a positive in a printing-frame, becomes hardened more or less according to the various degrees of transparency contained in the plate under which it is exposed. When the exposed plate has been soaked in water, the gelatin which has received the least light action becomes softened and will absorb liquid dye. This dyed plate is brought into contact with a piece of gelatin-coated paper under water, and after squeegeeing together they are put under a weight.

1226. In a short time it will be seen, on examination, that the gelatin of the paper is taking up the dye from the plate, and that a picture is being formed. The depth of the print depends upon the length of time the paper is in contact with the print plate.

1227. **Three-Color.**—For color work, a suitable series of dyes are supplied, and the print is made as follows: From a good, plucky three-color set of negatives make a set of glass positives, strong in contrast, and moderately dense. These should at once be marked with the name of the color in which each has to be printed. A plain gelatin-coated plate is now sensitized either with the "Pinatype" salts, or the following quick drying bath:

1228. **Print Plate Sensitizer.—**

Ammonium Bichromate	285 grs.
Warm Water	3½ ozs.
Acetone	3¼ ozs.

The bichromate is dissolved in the water, and when cold the acetone is added to it gradually and with constant shaking of the mixture. This solution will keep well and may be used repeatedly, but when a deposit forms it should be filtered. The print plate is immersed into this solution for three minutes in artificial light, and then stood up to drain and dry. They may be put into a rack to drain, but should be spread along a shelf to dry in the dark.

1229. They are ready for use as soon as dry. Mark these plates, *red, yellow,* and *blue,* respectively with pencil. Place these in the printing-frames, face to face, down on the respective positives, back up with a black pad, and print by daylight. The exposure required will be as long as a negative of similar character to the transparencies will take a print on gelatino-chloride printing-out paper, or gelatin paper may be bichromatized and used for the purpose.

1230. When exposed, the print plates must be at once soaked in cold water until every trace of yellow has washed out. They may then be put aside to dry if desired, or printing may at once be proceeded with. *Daylight is not essential for printing.*

1231. **Printing.**—The print plate marked *blue* is then soaked in the blue dye bath for about fifteen minutes. It is then washed under a stream of water until there is no color in the water running off it. A piece of plain gelatin-coated paper, a little larger than the plate, is then soaked in cold water until saturated, when the print plate is put under the water and the two films brought into contact. All air-bells and superfluous water must now be removed with a flat squeegee, rubbing from the center outward. The wet print should be protected by covering with a thin sheet of celluloid or rubber, during squeegeeing. Now lay upon the print a few thicknesses of damp blotting paper or a wet pad of felt, on that a plate of glass, and then a seven pound weight. Printing will be complete in ten to twenty minutes.

Examine the print by turning up one corner, and in order to insure perfect contact, should it be necessary to replace the print for further printing, immerse that corner again into water and again squeegee down. When the print is sufficiently deep, remove from the print plate and hang up to dry. If it is desired to make several duplicates, the print plate must be dyed up between each print, by placing in the dye-bath for about five minutes.

1232. When the blue prints are dry proceed to dye up the red print plate, and when sufficiently dyed and washed, put a blue print into water until limp, then bring the red plate into register upon it, and squeegee as before. Registration is best accomplished by holding the picture up to a strong light and looking through it. When the violet prints are dry, the yellow print plate is dyed up. The yellow dye is slow in action, so that the plate must soak in it for quite half an hour before transferring. *Registration of the yellow print can only be satisfactorily done by daylight.*

1233. When the tri-color print is finished, it will require to be fixed in a solution of sulphate of copper to insure permanency. It is then washed for five minutes and hung up to dry.

1234. **Modified "Pinatype."**—The following method reduces the operations of the original process and will be found to work successfully. When making the positives from the set of three-color negatives, they must be developed with an alkaline developer such as metol-hydroquinon. When dry, sensitize in the following bath:

1235. **Sensitizer for Red and Blue Print Plates.—**

Bichromate of Ammonium	1 dr.
Liquid Ammonia (880)	6 drs.
Water	10 ozs.

Immerse for four minutes and dry in the dark.

1236. When dry, put the bichromatized positives into printing-frames, back up with black paper or felt, and expose to daylight. Exposure must be made through the

glass. The method for timing the exposure mentioned in the former process will be found useful for this. The yellow plate, however, will require twice the exposure given to the red and blue.

1237. After exposure, well wash out all the bichromate and then remove the deposited silver from the film with the hypo-ferricyanide reducer. After being thoroughly washed, the plates are ready for dyeing up and printing from.

CHAPTER LIX.

Russian Oil Coloring.

A Method for Coloring Photographs, Prints, Drawings on Paper, China, Etc., With Oil Colors Without Paint, Brush or Pencil.

This extremely simple method is very easy to learn, and only a little practice is necessary for the production of good results. The process requires neither brush nor pencil, an ordinary cotton stump, even in the hands of a beginner, being made to accomplish results that many artists have tried for years to produce by means of the older and more generally known methods requiring the brush and oils.

The ease with which it is possible to evenly blend one color with another is the secret of this process. Overlapping of colors does no harm, as the last one applied is very easily removed, and where the color is not satisfactory it can be taken off and another applied. As a matter of fact, a limitless number of alterations can be made without any harm being done to the print. But, of all the alluring features, that of permanency stands paramount. This cannot be questioned, for oil is employed as the solvent of the coloring pigments.

The instruction has been prepared so each step follows in logical sequence. Every line should be studied with greatest care, for by so doing the very first print will be an acceptable specimen; while the following ones should be as quickly and successfully completed.

Outfit Necessary.—An ordinary hard wood knitting-needle, pointed at both ends, and about 12 inches long; a

small package of absorbent cotton; an artist's slab or an ordinary dinner plate; a small, soft linen rag; two India rubber erasers—one hard and one soft; a pen-knife; a flat paint brush (Badger hair); about five cents' worth of turpentine, five cents' worth of white gelatin, five cents' worth of pumice stone powder, and five cents' worth of glycerine.

OIL COLORS REQUIRED.

One tube each of crimson or rose madder, raw sienna, burnt sienna, ivory black, vermillion, Naples or chrome yellow, yellow ochre, Prussian blue and cobalt blue. This latter color is not necessary for your first experiments, but for the finest work it is recommended.

COLOR MIXTURES FOR PORTRAITURE.

Flesh Tint.—Mix crimson or rose madder with yellow ochre until it gives the natural creamy tint. For darker complexions add a little raw sienna. When a satisfactory flesh tint has been obtained it must be applied over the entire flesh surface.

Cheeks and Lips.—When coloring the cheeks and lips, add a little vermillion to your flesh tint.

Shadows.—For the shadows add a little burnt sienna to your flesh tint. Rub this color well into the heaviest shadows.

Half-Tones.—In coloring the half-tones take a little cobalt blue and rub it lightly over the half-tones (between shadows and high-lights.)

High-Lights.—In working the high-lights take a clean stump and rub it well over the high-lights; then take a little Naples yellow and rub over the same surface.

THE HAIR.

Flaxen.—For the producing of this color, use yellow ochre, and for the shadows add to this a little burnt sienna.

Auburn.—For this color use burnt sienna, and for the shadows add to the above a little ivory black.

Black.—For jet black hair add a small quantity of black to any of the above mixtures.

Grey.—For grey hair add a little cobalt blue to the colors prepared for black hair.

BACKGROUND.

The coloring of the background is not difficult, but success can only be acquired by practice. Observation of paintings and colored reproductions will materially aid one to secure correct ideas of color rendering. Plain and figured back grounds, varying in tone from the extremes of both warm and cold, may be colored by properly combining different pigments—such as, burnt sienna with a little black, Prussian blue with yellow ochre, burnt sienna with yellow ochre, etc.

DRAPERIES.

Yellow Draperies.—The brightest yellow colors may be imitated by using Naples yellow, the more subdued ones with yellow ochre.

Blue Draperies.—Blue draperies are produced by combining cobalt blue with Prussian blue.

Pink, Crimson and Scarlet Draperies.—Use rose madder for the lightest part of pink drapery.

Scarlet is produced by a mixture of vermillion and crimson or rose madder.

Purple Tints.—Purple tints are formed of a mixture of blue and crimson.

Green Tints.—For green tints use a mixture of Prussian blue and yellow ochre, or Prussian blue and Naples yellow.

Black Tints.—For a jet black mix equal quantities of ivory black, Prussian blue and burnt sienna.

PREPARING THE TINTS FOR COLORING.

Any kind of a picture can be colored—photographs on bromide paper, gelatin paper, platino or matt surface collodion paper, carbon, platinum, velox (or any gaslight papers), even engravings, drawings, etc., or prints on any kind of paper, glass or other material. The principal requirement is to have the surface so prepared that the turpentine cannot penetrate it. Any surface that will absorb turpentine must be covered with a hot liquid gelatin.

Papers That Will Not Need Coating.—Any collodion paper having a matt surface, such as aristo platino; or any gaslight paper such as velox, azo, argo, artura, etc.

Papers Requiring a Gelatin Coating.—Platinum papers of any grade, regular drawing papers, etc.

Preparing the Gelatin for Use.—Make a 5 per cent. solution of gelatin; usually two strips of gelatin, about 4x5 inches, dissolved in a glass of water, will be sufficient. *First*, place the gelatin in a vessel of cold water, to remove any particles of dirt that may have gathered. It is advisable to change this water two or three times, when the gelatin should be covered with a half pint of warm water, the temperature of which need not exceed 100°—just hot enough to melt the gelatin. As soon as dissolved filter the gelatin through a piece of linen cloth into an ordinary glass tumbler. It is now ready for use.

Although seldom necessary to re-gelatinize any collodion or glossy gelatin paper, yet when heavy coloring is required it is preferable to re-gelatinize the print, but before doing so its surface should be made dull. To accomplish this apply pumice powder with a piece of cotton flannel, rubbing in a circular motion until the entire surface is dull. Then dust carefully with a soft camel's hair brush, when the print is ready for coating. After deadening the surface of highly glazed papers with pumice powder, it is advisable to rub the print lightly with a soft cloth, after which the

gelatin may be applied. All matt surface prints should be first coated with glycerine before the application of gelatin.

Applying the Gelatin.—Gelatin is applied with a flat brush (Badger hair), and this must be done quickly with even strokes. If the strokes are started lengthwise of the print they must be continued that way. See that all portions of the surface are fully covered. If the gelatin has a tendency to draw on the brush—dragging and leaving lines—which would be the case if not quickly applied, as the gelatin sets rapidly, it would be better to use a weaker solution of gelatin and make two applications. In either case care must be exercised that a clean sweep be made with the brush the full length or width of the print. Never stop in the middle. To see if you have evenly coated the paper, hold the print before the light and look through it. The parts that are not completely coated can be gone over again. When coated hang the print up to dry; this should not require more than fifteen minutes.

Preparing the Stump.—The preparing of the cotton stumps is perhaps more difficult than some of the other features of this process, as the point of the stick must be completely covered with the cotton. A few trials, however, will make one a master of this. The required sizes of stumps vary according to the details of the work. When a different size stump is desired all that is necessary is to withdraw the former piece of cotton and discard it, and from a clean piece make another stump. This can be instantly done after a little practice.

To prepare the stump, sharpen the wooden stick to a very fine point. Do this by laying the end of the stick upon a piece of sand paper, so the taper of the point blends back at least two inches. The taper of an ordinary wooden knitting-needle is about ¾ of an inch, but as this is too abrupt it will be necessary to make a sharper point by rubbing down with the sand paper. Illustration No. 108 shows the taper required.

Now place a small piece of absorbent cotton on the index finger of the left hand, permitting it to extend to the tip. Place the thumb on the cotton, at the base of the finger, to hold the cotton in position. Then, take the wooden needle and, holding it perpendicularly, rest the point on the end of the finger, in the center of the fine fibres of cotton. Commence rolling the stick or needle towards you. The constant rolling will gather up the cotton. Continue to turn

Illustration No. 108.
Stump.

the needle or stick until the cotton takes a good hold; then slightly lift the stick from the finger, permitting the cotton to roll in a ball over the tip until you come within ¼ of the end of the cotton. Allow this end to roll up along the stick. This will hold the cotton secure to the stick, at the same time preventing ragged edges. The point of the needle must not project through the cotton—the wood must be fully protected. The smaller the stump the greater should be this precaution. Considerable time should be devoted to this practice, as much depends upon the proper stump. Illustration No. 108 gives an idea of the different shapes of correctly made stumps.

Before preparing your colors provide a little vial or dish to hold turpentine—a small butter plate will serve very nicely. Pour into this little dish about ½ ounce of turpentine. If you are to color platinum prints it will be necessary to mix a little poppy or linseed oil with the turpentine—a few drops will be sufficient. For collodion or gaslight papers the plain turpentine should be used, as the oil is unnecessary. Having prepared the turpentine distribute the colors on the slab or plate.

To mix the colors for special tints first squeeze a small portion of the oil color from each tube onto the plate, placing the colors about 2 inches apart. Mix the colors as you require them; *for example,* if you want a green, first moisten the stump with turpentine, dip into the yellow and carry it to a clean portion of the slab; next dip into the blue and place it within an inch of the yellow, then mix the two together. By using a little more of one than the other a lighter or a darker tone may be obtained. If the color is too heavy (thick), add a little more turpentine. After mixing the green prepare any other colors required, instruction for which has already been given.

COLORING LANDSCAPES.

For coloring landscapes begin with the sky; then if there is any water in the scene, color it, using the same tints as for the sky. Next color the background, and conclude with the foreground. By the proper manipulation of the colors you can produce a sky which will appear clear, cloudy, warm or cold, according to the blending of the color.

Clear Sky.—To color a clear sky prepare the wooden needle with a little ball of cotton-wool on each end. Moisten both stumps by dipping into the turpentine, but do not drain them afterwards. Dip one end in liquid blue, and the other in any color you may choose for the horizon. Begin by quickly covering the sky with the blue, applying

it with the stump in a circular motion without any regard as to regularity. After the sky has been covered, take the other end of the stump and rub in the horizon, starting at the bottom or edge of the horizon and working up into the sky. Apply this tint promiscuously, using the side of the stump as you rub it over the surface. After this application take a fair sized piece of cotton-wool and, before the turpentine has time to dry off, rub from the top to the bottom steadily, in circular motion, to mix the two tones together. This will give a gradual blending from the horizon color to the blue sky color. If the desired effect has not been obtained, or if the color dries too quickly, it is not necessary to rub farther, but prepare a new stump, of pretty good size, dip it in turpentine, and rub the surface with the turpentine. This will spread the colors more, at the same time slightly diluting them. If the color be too strong take a dry stump and, using the side, rub freely on the parts that require reducing, at the same time pressing on the stump quite hard. No harm will be done so long as you do not use the point. With the dry stump rub places requiring a lighter tone than others.

Reflections on the Water.—When a portion of a lake or any body of water throws a reflection from the sky, color the water the same as the sky, but proceed to apply the tints in reverse order. Especially is this true where clear water exists. For sea water blend horizontally from dark mauve to pale green. The waves should be shaded with a small stump and colored without turpentine; i. e., dip the stump into the undiluted color and rub onto the print. For this purpose as much color as possible must be taken onto the stump, the latter being held quite flat, as it gives a broader sweep. The light portions of the shadow are blended with a clean stump dipped into turpentine, allowing it to dry for a second or two before applying. Then rub these lighter portions, gradually blending them into the deeper shadows. This will supply the necessary gradation.

Dark Clouds.—For dark clouds prepare a tightly wound stump, and, without wetting in the turpentine, dip in the proper color and rub on a piece of clean paper until greasy lines are produced. Then proceed to work in the clouds, drawing the stump so as to form circular lines, increasing the length of the stroke as you come nearer to the horizon. For *dark clouds* a mixture of blue, pink and dark mauve is very effective. *Light tints* can be produced by rubbing with a dry stump or India rubber.

Light Clouds.—To color pale tinted clouds fold a small linen rag over the forefinger of the right hand; then slightly moisten with turpentine and rub over the sky portions in cloud shaped form until you get the proper reduction in the color. The outlines of the turpentine must now be rubbed off with a wad of dry cotton-wool, kept ready in the left hand. This must be done quickly, before the turpentine evaporates. By this means you blend the clouds. Sharp lights can be cut or rubbed in where desired with an India rubber.

Foregrounds.—In painting foregrounds, leaves and branches of trees are colored by dipping the stump into a solid color, or the combination of desired colors, *undiluted.* But before applying to the print, rub the stump in a piece of linen placed between the first and second fingers of the left hand, turning the stump continually until the surplus oil is removed. Apply the stump to those portions you wish colored.

Care must be exercised that the proper color be used for high-lights, even in green foliage, as they verge strongly on the violet and blue tints. Trunks of trees have a blue cast in the high-lights; in fact, any object in strong light has a violet or blue cast, and the proper colors must be used to give them their natural appearance. These colors are all applied in the same manner. The deepest shadows are worked heavier than the more delicate ones. One color must be completed before applying the second, after which

the two should be blended. Do this with a wad of dry cotton, or with a large cotton stump—rubbing freely.

When strong high-lights (white portions) are desired, prepare a new stump; dip it into clean turpentine, and after allowing it to set for a second or two apply it to the high-lights, rubbing the surface delicately. If this does not sufficiently reduce the lights apply a little more pressure to the stump until you obtain the desired result.

Remember that turpentine will reduce the colors to the clear paper, if you so desire, and that you cannot injure the surface, providing, of course, the stump is properly made.

For your first practice work it is advisable to blend different colors on ordinary manilla wrapping paper. Several such experiments will give you a splendid idea of proper blending, as well as of color combinations. It is always advisable to experiment on plain paper before applying a color to the print, as the secret of this process lies in the proper blending of colors. First determine the colors you wish to use on the particular picture in hand. Should you err in the proper selection, dip the stump in turpentine and remove the color applied; then, discarding the stump, make a new one and apply another color, or combination of colors. Your first practice should be devoted entirely to the blending of colors. Refer to the different combinations of colors given in the forepart of this instruction. By properly diluting these a large variety of tone can be produced.

Bear in mind, if a color is too strong on the print it may be reduced to a certain extent by simply rubbing with the stump. If this fails to give the desired result, apply a little turpentine to a clean stump, and after allowing it to set for a second or two, rub the surface gradually. This should sufficiently remove the superfluous color and enable one to obtain the proper reduction. Then by careful manipulation, using this same stump, the colors can be made to blend, unless the stump is too heavily charged with the turpentine. In such a case apply a tuft of dry cotton.

Final Cautions.—When heavy, coarse platinum papers are used the surface must be gelatinized with a double coating. Smooth platinum paper usually requires but one gelatin coating. Unless dried in a room of 80° Fahr. the gelatin coated print should be allowed to stand for two hours before applying the oil colors. Gelatin, collodion and carbon prints need no gelatin sizing, as the emulsion keeps the turpentine from penetrating into the paper.

In preparing the turpentine for platinum papers, poppy oil, or boiled linseed oil, should be added. Use a few drops of the oil to two drams of turpentine. For collodion surface papers no oil is required in the turpentine, as it would tend to produce a greasy surface.

COLORING PORTRAITS.

The same method of procedure is employed in coloring portraits as for landscapes. If you have previously experimented with landscape prints, the experience thus gained will make it possible for you to start on the background at once. If you have not practiced on the landscape prints, then it will be advisable to make your first experiments on plain manilla paper, selecting and blending colors that would be suitable for the background.

Prepare the stump according to the size of the background you intend to color. Dip it in turpentine and charge one side with one of the colors that you expect to use. Carry this to the slab. Then, using the other side of the stump, to avoid mixing the original stock colors, again charge it with another color, and place on the slab within an inch of the first. Mix these together and apply, in a hit or miss manner, to the portions of the background that you wish to cover. Do this as quickly as possible. Spread the colors over the entire background surface, in a circular motion, as rapidly as possible, before the turpentine evaporates. Then with a wad of cotton lightly rub the surface

in a similar manner, until you get a smooth and uniform tint. Rub lighter on the portions that you wish stronger than others, while the more delicate and light ones should be rubbed harder. In this way the depth of tone is controlled, and at the same time an even blending supplied. Continue rubbing with this cotton until the turpentine has completely evaporated and the colors dried. No harm will be done if the colors should touch any object on the photograph other than the background, or if they overlap considerably, as corrections are easily made when you come to that portion. It makes no difference whether the print is too strong or too weak; alterations can be made as many times as necessary until the desired tone is obtained. After each application, however, the print should be evenly blended by rubbing lightly with dry cotton.

When the body tone of the background is completed, fill in the shadows and high-lights. As you approach the principal object or subject, the tint must be warmer, while toward the edge of the print it may be darker; much depending, of course, on the nature of the print. To make the background darker, take the wad of cotton that has been used in rubbing the background, dip it in a little of the color you desire, rub it over a piece of rough paper, and then apply where desired. For shadows or densest portions of the background charge a clean stump with the proper color, but before applying to the print remove the apparent greasiness by turning in a piece of cloth held between two fingers of the left hand. Work up the shadows with the stump in this condition until the proper strength is obtained, after which blend the deep shadows with the higher tones, using a large cotton stump. The light shades are obtained by rubbing the surface freely with the dry stump. It is not necessary to first cover the background with turpentine; just apply the color as mixed and dilute with turpentine. If the print does not take the color well another drop or two of oil in the turpentine will overcome this difficulty.

Coloring the Face.—If any of the background coloring

has run over onto the face, it may be removed by rubbing the surface with a piece of soft, dry cotton, or India rubber; yet this is not necessary unless the background colors are extremely bright. Should any difficulty be experienced in removing the background color, it can be rubbed off with a clean cotton stump dipped in turpentine. The face can be colored with from three to five tints, three being sufficient for the beginner. The mixtures are composed of one or two colors, never more. It is easy to mix different colors, as their appearance when together will be your guide; so it is not necessary to have any previous knowledge regarding color combinations. Alterations of tints and shades can be made at will.

First Tint (Flesh Color).—Prepare a stump of a size proportionate to that of the face to be painted. Dip the stump in turpentine, slightly squeezing it between the first and second fingers, and with it carry some crimson and some yellow ochre to the palate or slab. Gradually mix until you get the desired flesh tint. The turpentine thins the mixture sufficiently so it can be easily and smoothly applied. Rub the stump over the face in a circular motion, as quickly as possibly, exercising no particular pains just so long as the surface is covered. This accomplished, immediately rub the surface lightly and in a circular motion with a soft linen rag doubled over the index finger. Do this until the color is quite dry and even. If for any reason the color is not sufficiently strong nor satisfactory, begin again, without removing the preceding tint, and add one color or the other until you obtain the natural tine. Remember, that when using a new stump it must be always dipped in turpentine, otherwise the cotton would absorb the colors, making it very difficult to apply them evenly to the print.

Caution.—*Never dip the cotton stump in the turpentine while charged with colors*—always make a new stump. Always use the same end of the wooden stick for the plain

turpentine stumps, while the other end should be reserved exclusively for the colors. In applying the color to the face, be very careful that it does not spread over onto the background. Avoid working too close to the outlines of the face, as the color can be spread when shading and blending by rubbing with the cotton. It is important that the colors be applied and spread rapidly and evenly, and the rubbing continued until dry, for the turpentine quickly evaporates, the colors becoming quite permanent and somewhat difficult to alter.

Second Tint (Natural Red).—Charge a clean stump with the same colors as before, but *without* turpentine. Place the stump between the two fingers and turn toward you in a circular motion, so as to harden as well as sharpen the stump. This only requires from three to five seconds. When in proper condition begin on the prominent portions of the cheek, rubbing lightly and in a circular motion; then proceed in a similar way on the lips, ears, chin, etc. If the color is too yellow add a little crimson, and vice versa. Each time before applying the color see that it is set well into the stump. The application must be light, and then the color rubbed dry with a clean dry stump. Next, with a wad of cotton blend the colors together. In some cases it is best to blend the colors before applying the red to the lips, cheeks, ears and chin; but after applying the red these colors can be blended over the former blending.

Third Tint (Shading).—Add some burnt sienna to the flesh tint, and apply with the same stump, rubbing lightly and evenly. For *dark shadows* apply more pressure to the stump, and less for *light ones.* After all the shadows are colored rub with a clean stump, always beginning with the lighter portions and rubbing into the shadows so that the color is not carried from the dark to the light. No harm is done if the light color is carried into the dark parts. As previously stated, the face may look very well colored with three distinct tints, but four or five will materially improve the result.

Fourth Tint (Lights).—The lightest parts of the face or the figure should be built up with a small and finely sharpened stump immersed in turpentine and then pressed between the fingers and a linen rag. Turn the stump constantly toward you until it becomes quite dry. Apply the stump lightly at first, and if too much color is removed a tuft of cotton may be used to blend in the surrounding tints. The turpentine must be applied to these high-lights in a circular motion, and before the outlines have had time to dry. Be sure to use a clean stump for this work. To give the high-lights a natural flesh tint they can be touched with a little chrome yellow. This is best applied with a soft, puffy stump, afterward rubbing the surface with a dry stump or wad of cotton. If too yellow it can be rubbed off with the dry stump, by simply applying a heavier pressure.

It is advisable for beginners to use only three tints. Small size faces may be colored with two tints. After some practice it will be easier to color with four or five tints.

Fifth Tint (Semi-tone).—For the semi-tone take a little cobalt blue on the point of a small stump. Rub dry by placing the stump between the finger and the linen rag, and then apply very lightly to the surface between the lights and shadows. Rub close to the hair, under the eye and the lips, on the chin, etc. After the semi-tone is applied go over all the surface with a dry stump until the tone is evenly blended and the colors have become quite dry.

The Eyes.—Wash the eyes with turpentine, using a fine stump, and then color the white portions a light blue. When rubbed dry the iris should be painted with whatever color is desired. This is done with a stump that has not been moistened with turpentine, as previously explained. For the pupil, use black on a dry stump, roll the stump to a very fine point, between the finger and cotton cloth, until it becomes quite dry. Then use this as a pencil and apply the color with the tip. This stump is also used to retouch the eyebrows and lashes.

Outlining the Face.—After completing the coloring of

the eyes the face can be shaded in strong, bold lines, by using crimson and burnt sienna—for instance, under the eyelashes, in the corners of the eye, on the lips, under the chin, in the ears, etc. If you find, after applying these colors, that the shade is too dark, remove it with a dry stump. This retouching of the outlines gives the portrait a more clean and artistic appearance.

Coloring the Hair.—If the hair has been touched with any other color, it should first be washed with the turpentine applied with the stump, and then rubbed over with clean cotton, after which color to any desired tint. When coloring the hair be careful not to touch the face. It is best not to color quite to the outline of the hair, for the tint can be easily spread by rubbing. The basic color is always put on with a stump moistened with turpentine; for shadows no turpentine is used; while lights are put in with turpentine only. For mixing colors for hair, see previous instruction.

Coloring the Drapery.—In coloring the drapery proceed exactly the same as with the other portions, beginning with the foundation tint, first covering the main surface, then the shades and shadows in their proper order, and finally the high-lights. In applying the colors to the drapery, be sure that they are not too thick. For working up the pattern or figure of the goods, also the shadows of the drapery, with the final shades, use the color without turpentine, and blend with the tuft of cotton. *See Drapery Color Mixture.*

Coloring Lace and Jewelry.—Jewelry must first be colored with the foundation tint, followed with the shades. The lights can be produced with turpentine on a small stump, or with an india rubber. If a very fine high-light is desired use the point of a sharp pen-knife, or lay on thick Chinese white. The former is preferable. Seven colors are quite sufficient for any desired effect, for with these many additional colors may be made. Of course, after longer practice more colors may be used.

Varnish.—To produce a glaze surface like that of an oil painting, cover the picture with varnish. This may be done by preparing a mixture of one-fourth varnish and three-fourths alcohol. Spray this solution over the print with a blow-pipe, or with an air-brush. When using the blow-pipe, hold the print at arm's length; and placing the blow-pipe in the tumbler of prepared varnish, blow through the tube toward the print. This gives an even, fine spray. Continue the varnishing until the entire print is thoroughly sprayed. If too much varnish is applied the print will be too glossy. An excess of alcohol will produce tear drops. Where these exist add more varnish, which will remove the tear drops. While any varnish used by artists will answer, Soehnee Freres is always reliable.

Retouching Prints with Oil Colors.—There are times when it is quite difficult to spot photographs with the ordinary brush and obtain the proper blending of color, whether the print is water color or black and white. This may be accomplished with the oil colors. For the retouching of white spots a very fine stump is necessary. Charge the stump with the required color and rub dry between the thumb and a soft cloth, laying the cloth over the index finger. Constantly turn the stick toward you until the grease has disappeared and the oil becomes quite dry. Touch the spots as lightly or as heavily as is necessary to fully cover the spot; then with a little absorbent cotton blend the color of the main surface of the print, when the spot will be entirely removed and the spotting will not show. Spotting of both sepia and black and white platinum prints is very successfully handled with the oil colors.

Drawing with the Oil Colors.—Free hand drawing may be done with oil colors, by use of the stump. Any kind of paper may be employed, but it must previously be covered with the gelatin solution.

CHAPTER LX.

How the Studies Illustrating this Volume were Made.

Study No. 1. Portrait by Ryland W. Phillips, Philadelphia, Pa. This picture was made in an operating-room 45 x 25 feet, under a top and side light. The light was diffused with muslin curtains and controlled with dark opaque shades on spring rollers. The lens used was a Portrait Unar; focal length 19 inches; stop used, open and diffused; exposure given, 2 seconds; plate used, Seed 27 Gilt-Edge, developed in Pyro. The negative was built up locally while developing in a weak developer. The negative was first made on a very dark background and the background afterwards worked in on the back of the negative after flowing it with ground-glass substitute. The printing process was Willis & Clements Platinum CC. Frontispiece.

Study No. 2. Portrait by John H. Garo, Boston, Mass. This picture was made in an operating room 34 x 45 feet with a top and side light; size of light 20 x 22 feet. The light was used wide open without any diffusing curtains. The lens used was a No. 10 Goerz, Series III; focal length, 22 inches; stop used, open diaphragm; exposure given, 2 seconds; plate used was 20 x 24, Seed's 27 Gilt-Edge; negative developed in Pyro; printing process, Willis & Clements Platinum paper. (See Page 23.)

Study No. 3. A portrait by Rudolf Eickemeyer, New York, N. Y. Subject, "A Ranchman." The picture was made in an operating room 20 x 30 feet. The style of light was a side and slanting top; size of light, 8 x 10 feet. The light was used wide open. The lens used was a Dallmeyer; focal length, 14 inches; stop used, open; exposure

given was 4 seconds; plate used, Seed's, developed with Pyro-Soda with no after manipulations; printing process, Sepia Platinum. The subject was placed sufficiently far from the light to give an angle of 45 degrees. (See Page 24.)

Study No. 5. Portrait by Burr McIntosh, New York, N. Y. The portrait was made in an operating room about 20 x 20 feet; style of light used was side and top; size of light about 15 feet high by 17 feet wide. The light was diffused with light curtains; lens used was a Goerz; plate used, regular; developer, Pyro-Acetone with after manipulation. (See Page 40.)

Study No. 7. Portrait by Will Towles, Washington, D. C. This picture was made in an operating room 18 x 35 feet; style of light used, single-slant with angle of 50 degrees, west light, with building close by running 20 feet higher than the skylight; size of light used 12 x 17 feet. The light was used wide open without curtains; the lens used was an old series, 12 x 15 Dallmeyer; focal length, 19 inches; stop used, wide open; exposure, 5 seconds; plate used, Hammer Red Label; developer, Pyro-Acetone, with no after manipulations; printing process, backed Aristo Platino sepia tone. The picture was mounted on a deep sepia colored mount. (See Page 65.)

Study No. 8. Portrait by Pirie MacDonald, New York, N. Y. The sitting was made 12 feet from a single window, by the side of which were three Cooper-Hewitt tubes, the bottom of which were 6 feet 6 inches from the floor, the exposure being one and one-half seconds. The plate used was an ordinary Cramer and was developed with Pyro. There was no after manipulation of the plate and absolutely no retouching. In other words, it is entirely the product of the light and the plate. The print was made on Sepia Platinum paper. (See Page 66.)

Study No. 9. By Homeier & Clark, Richmond, Va. This picture was made by an ordinary light diffused with curtains; lens used, Dallmeyer Rapid Rectilinear, 10 x 12; stop used, wide open; exposure given, 3 seconds; plate used, Seed Regular, developed with Pyro. Negative was

locally reduced after developing. Printing process, Carbon. (See Page 71.)

Study No. 11. Portrait by E. A. Brush, Minneapolis, Minn. This picture was made in an operating-room 21 x 44 feet, under a single-slant light, 15 x 18 feet. The light was used wide open with a light controlling screen; the lens used was a 3-A Dallmeyer; plate used, regular single coated, developed in Pyro and printed on Angelo Platinum paper. The border effects are all obtained by double printing. The final print was mounted on a very deep brown card with only a quarter-inch margin. (See Page 85.)

Study No. 12. Portrait by Mary Carnell, Philadelphia, Pa. This picture was made in an operating room, 17 x 45 feet. Style of light, single-slant, ground-glass; size of light, 12 x 18 feet; skylight diffused with white curtains; lens used was a Bausch & Lomb Universal Portrait, Series A.; plate used, Seed's 26-X, developed with Pyro with no after manipulations. The print was made on Carbon. (See Page 86.)

Study No. 13. Portrait by A. F. Wright & Co., Wilkesbarre, Pa. The sitting was made in an operating-room, 20 x 35 feet; style of light used, side and top; size of light, 10 x 22 feet. The side light was entirely cut off with opaque shades; the top shades were drawn down, leaving an opening in the lower portion of the top light of a space about 4 x 4 feet. Also used opaque screen very close to the sitter with about one foot square opening in the screen and allowed the light to fall through this opening upon the face. The lens used was a 3-B Dallmeyer with a second largest stop, 6 seconds exposure; plate used was a Standard ordinary, developed with Pyro. The background and drapery were slightly reduced after development and print was made on Angelo Sepia Platinum paper. (See Page 114.)

Study No. 14. Portrait by Knaffl Bros., Knoxville, Tenn. This picture was made in an operating-room 20 x 40 feet; style of light used, single-slant; size of light, 14 x 20. The light was diffused with white curtains; the lens used was a Bausch & Lomb; plate used, regular ordinary plate

developed in Pyro with no after manipulation. The print was made on Platinum paper, with white background washed in. (See Page 122.)

Study No. 15. Portrait by B. J. Falk, New York, N. Y. This picture was made in an operating-room, 25 x 30 feet; style of light used, single-slant top light; size of light, about 15 feet wide and 16 feet long. The light was controlled with a portable head screen in conjunction with opaque shades attached to skylight. The lens used was a Hermagis; focal length, 12 inches. Regular ordinary plates were used and developed with Ortol; the print was made on Sepia Platinum paper mounted on parchment. (See Page 130.)

Study No. 16. Portrait by C. J. Van Deventer, Decatur, Ill. This picture was made in an operating-room, 20 x 30 feet; style of light used, top and side; size of light, 18 x 18 feet. The light was used wide open in making this exposure; the time of day was 10:30 A. M. The lens used was a No. 9 Collinear, Series No. 2; focal length, 20 inches; stop used, F. 16; exposure given, 8 seconds; plate used, Seed 27 Gilt-Edge, developed in Pyro. After development, the hands were locally reduced; printing process, red chalk Carbon and mounted on a combination mount—the first sheet cream linen and the second deep sepia. (See Page 133.)

Study No. 17. Portrait by W. M. Hollinger, New York. This picture was made in an operating-room 25 x 28 feet; style of light used, side and top; size of light, 12 x 18 feet; light used wide open without curtains; lens used, Bausch & Lomb Unar; plates used, regular ordinary plate and developed with Pyro. Absolutely no after manipulation of the plate; print made on Sepia Platinum. (See Page 151.)

Study No. 19. "Portrait of Dr. Samuel T. Chew," by Meredith Janvier, Baltimore, Md. The picture was made in a resident studio; size of room, 16 x 20, ordinary private home library; style of light, side window; size of light, ordinary window about 30 inches wide; the light

was used wide open; lens used, Rapid Rectilinear; plate used, Seed 27 Gilt-Edge, developed in plain Pyro. There was no after manipulation of any kind. (See Page 164.)

Study No. 21. Portrait by W. M. Morrison, Chicago, Ill. The picture was made in an operating-room, 25 x 40 feet; style of light used, single-slant; size of light, 16 x 20 feet; light used wide open; lens used, 3-A Dallmeyer. Regular plates were used and developed with Pyro; printing process, double mounted Platino. (See Page 176.)

Study No. 22. Portrait by Mrs. W. W. Pearce, Muskegon, Ill. Title, "The Young Professor." This picture was made with Bausch & Lomb Rapid Rectilinear lens; stop used, full opening; plate used, Ilford; exposure given, one-fifth second in a studio; developed in Pyro and enlargement was made on Bromide. (See Page 223.)

Study No. 23. Portrait by A. L. Bowersox, Dayton, Ohio. The picture was made in an operating-room 24 x 42 feet; style of light used, single-slant 30 degrees; size of light 14 x 16 feet. Open light used with side screens to reduce the strong light on the shoulders and ear. The lens used was a No. 3 Deardorff; focal length, 15 inches with no stop; exposure given, 1 second; plate used, Cramer Banner, developed with Pyro-Acetone. The plate was not reduced nor intensified except such treatment as the Beck process requires. This negative was made with a plain black background and the glass side of the negative was ground-glassed and the background design worked upon this surface. Every photographer utilizing this method of work can introduce as much individuality into his work as any painter in his portraits painted with the brush and paints. This portrait was printed on Angelo Sepia Platinum paper. (See Page 254.)

Study No. 24. Portrait by Curtis Bell, New York, N. Y. This picture was made in an operating-room 28 feet by 30 feet; style of light, high single-slant, mostly top light; size of light, 15 x 25 feet. An open light was used, but cut off by screen with head and side shades. Lens used, Portrait Unar; ordinary single coated plate was used

and developed with Ortol. There was no after manipulation of the negative, but printing-frame was tissued to print up high-lights. The print was made on Sepia Platinum paper mounted on sepia mounts. (See Page 284.)

Study No. 25. Portrait by F. Milton Somers, Cincinnati, O. This picture was made in an operating-room 20 x 40 feet; style of light used, ordinary window with lower half closed; lens used, Dallmeyer 4-B; plate used, Standard single coated, developed in Pyro with no after manipulation. This negative was made by the window at a distance of about 8 feet. The lower half of window was closed with curtains. The background was black and worked in on the back of the negative. The exposure given was about 1 second; the print was made on Sepia Platinum. (See Page 290.)

Study No. 26. "The Angel of the Darker Drink," by Miss Katherine Bingham, St. Johnsbury, Vt. This picture was made in the home; the lens used was a Goerz, Series 3-B; stop used, U. S. 4; plate used, Seed 27; exposure given, 10 seconds; developer, Pyro-Acetone. There was no after treatment of the plate, neither reducing nor intensifying. The print was made on Willis & Clements CC Platinum paper, mounted on salmon colored mount. (See Page 311.)

Study No. 27. Portrait by George Graham Holloway, Terre Haute, Ind. This picture was made in an operating-room 16 x 30 feet with a north light facing a large brick building; size of light, 12 x 15 feet, yet light was used wide open and was controlled with black screens; lens used was a Collinear; plate used, regular Cramer Banner, developed in Pyro. There was no altering or after manipulation of the negative. The print was mounted on a combination mount, the first mount being medium sepia and the final mounting being dark sepia. The print was toned sepia. (See Page 334.)

Study No. 28. Portrait by Carl Semon, Cleveland, O. Title, "In a Garden Hat." The exposure was made at 10 A. M., weather fair; lens used was a Voightländer

Heliar; focal length, 12 inches; stop used, F. 5; exposure, 20 seconds; plate used, Seed 26x, developed in Pyro. The diffusion was obtained by working away from the light. There was no after manipulation of the negative. Printing process, Platinum. (See Page 339.)

Study No. 29. Portrait by Charles C. Kough, Greensburg, Pa. The negative was made in September at about 3 P. M. The exposure given was 3 seconds on a Seed 26x plate. The style of light is an old style top and side light—side 10 x 6 feet, top 10 x 12 feet. Light controlled with a set of opaque window blinds. Direct light also used, never diffused, the direct rays giving more roundness, better modeling and more sparkle to the negative than diffused light. The lens was a Morrison Rapid Rectilinear. Stop F. 8. Pyro developer, plate treated locally in development, by rinsing the plate just after the image began to show, applying the developer with the tip of finger to the face to build it up ahead of the drapery just enough; then, immersing the entire plate in the developer until it developed to the strength required. The slight effect of foliage in the background of this picture was worked on the back of the plate with Prussian blue on the end of a match. The print is on Angelo Sepia paper. (See Page 346.)

Study No. 30. Portrait by Geo. Tingley, Mystic, Conn. The picture was made in an operating-room 20 x 30 feet; style of light, top, 45 degrees and no side light; size of light, 12 feet square. The light was diffused with curtains; lens used was Gase & Charconnet, 4-4 size, focal length, 14 inches; plate used, Cramer Crown, developed in Pyro-Soda with no after manipulation. The print was made on Platinum. (See Page 367.)

Study No. 31. Portrait by Charles C. Pike, Indianapolis, Ind. This picture was made in an operating-room 24 x 36 feet; style of light used, hip-light about 45 degrees; size of light, 12 x 14 feet. The light was used wide open and this negative was made directly across from center of the light; lens used was old style Darlot; focal length, about 15 inches; stop used, almost full opening; exposure

given, 1 second; plate used, Seed's Regular, developed in Pyro with no after manipulation whatever; printing process, Platinum. (See Page 368.)

Study No. 33. Portrait by Sweet Bros., Minneapolis, Minn. This picture was hung in the Fifty-second Annual Exhibition of the Royal Photographic Society of Great Britain. The portrait was made with a 3-A Dallmeyer lens, Seed 27 Gilt-Edge plate, developed in Eikonogen and Hydroquinon developer. (See Page 376.)

Study No. 34. Portrait by J. M. Brainerd & Co., Rome, N. Y. This picture was made in an operating-room 18 x 28 feet with an extension; style of light used, vertical side light with steep high top light; size of light, 12 feet; light used wide open; lens used, was a 4-4 Voigtländer; focal length, 10 inches; stop used, F. 8; exposure given, one-half second; plate used, Imperial Standard, developed with Pyro tank development, 30 minutes, with no after manipulation; printing process, Nepera. (See Page 395.)

Remarks.—Simplicity is the rule to follow. When necessary use reflectors, screens or head screens. In the present case nothing was used except a plain white background, which helps to illuminate the subject and admits of shorter exposure.

Study No. 35. Portrait by J. L. Schneider, Baker Art Gallery, Columbus, Ohio. Subject, "The Chief Justice." This picture was made in an operating-room 22 x 50 feet; style of light, hip; size of light, side light 7 x 12, top light, 12 x 28. Skylight was diffused with curtains, also used screen between sitter and side light. The lens used, 4-B Dallmeyer; plate used, regular, developed in Pyro-Acetone. No after manipulations on the negative after development. The effect of gradation from the face to the bottom of the negative is produced with a small perforated screen vignetted in front of the lens. The print was made on Sepia Platinum paper, printed in with a tinted margin and embossed. (See Page 409.)

Study No. 38. Portrait by R. H. Kimball, Concord, N. H. Subject, "Boy With Rabbit." This picture was

made in an operating-room 25 x 45 feet fitted with a double-slant light the size of which was 10 feet with a 6-foot side light and a 16-foot top light. When making this exposure the extreme top and all of the side light was shut off entirely. A side screen was used with an opening about 20 inches square close to the figure. The curtains on this screen were opaque; the lens used was a Bausch & Lomb-Zeiss Tessar, Series 2-B; focal length about 28 inches; stop used, F. 4; exposure given, 3 seconds; plate used was a Seed Gilt-Edge, developed in Pyro. There was no local reducing or after intensifying of this negative. Printing process, Willis & Clements Platinum mounted on a combination mount, first mount salmon color followed with a sepia brown. (See Page 431.)

Study No. 39. Portrait by Jamieson Sisters, Pittsburg, Pa. This picture was made in an operating-room 20 x 24 feet; style of light, single-slant; size of light, 12 x 12 feet. Light contains diffused curtains, although this picture was made with an open light. The lens used was a Goerz No. 7; plate used, Cramer Crown regular, developed in Pyro with no after manipulation; print made on backed Platino. (See Page 432.)

Study No. 40. Portrait by George J. Parrot, Fort Wayne, Ind. This picture was made in an operating-room 22 x 29 feet; style of light, single-slant; size of light, 12 x 18 feet; light was used wide open without diffusing curtains; lens used was an 8 x 10 American Optical; stop used, F. 6; exposure given, one second and also part of of the drapery was locally reduced with Red Prussiate of Potash reducer. The background was worked in on the back of the negative. Printing process, Willis & Clements TT Platinum. (See Page 437.)

Study No. 41. Portrait by George J. Parrot, Fort Wayne, Ind. This picture was made in an operating-room 22 x 29 feet; style of light, single-slant; size of light, 12 x 18 feet; light used wide open without diffusing curtains; lens used, 8 x 10 American Optical; stop used, F. 6; exposure given, 1 second; plate used, Standard Orthonon, developed

in Pyro; printing process, Willis & Clements TT Platinum. (See Page 438.)

Study No. 42. Portrait by Jos. Thiebault, Fall River, Mass. The picture was made in an operating-room 20 x 35 feet; style of light, side light 6 x 7 feet, top light, 13 x 15 feet. The light was used full open, but all light was diffused with muslin curtains very low. The strong lights have been produced by direct sun's rays from a small window to the back of and to one side of the sitter at the rear of the skylight. The lens used was a Dallmeyer Anastigmat; focal length, 18 inches; stop used, F. 8; exposure given, 5 seconds; plate used, Seed Non-halation, developed in Pyro and slightly locally reduced; printing process, sepia brown framed in sepia oak. (See Page 445.)

Study No. 47. Portrait by F. A. Rinehart, Omaha, Neb. This picture was made by perpendicular side light 6 feet wide and 8 feet high. The light was diffused with curtains; lens used, Bausch & Lomb No. 10 Portrait Unar; focal length, 18 inches; exposure given, snap; plate used, Cramer ordinary, developed with Pyro. The plate was locally reduced after development; prints made on Willis & Clements YY Sepia. (See Page 464.)

Study No. 49. Portrait by A. J. & W. G. Thuss, Nashville, Tenn. This picture was made in an operating-room 32 x 35 feet; style of light used, single-slant; size of light, 8 x 12 feet; light used wide open using head and side screens for controlling the light; lens used, Dallmeyer old style; plate used, regular single coated, developed in Pyro and locally reduced after development. The print was made and double mounted on Platino paper and finally mounted on a salmon color mount with embossed opening. (See Page 470.)

Study No. 51. Portrait by J. M. Pottenger, New Castle, Pa. This picture was made from an enlarged negative with background worked in. The original negative was made in an operating-room 20 x 35 feet, with a small light 8 x 10 feet used wide open. The lens used was a Unar; focal length 14 inches; stop used, open lens; exposure

given, 1 second; plate used Seed 26x, developed in Pyro with no local reducing nor intensifying. The enlarged negative was made with a Goerz Anastigmat, 8 x 10; stop, F. 16 with 10 seconds exposure. After developing, the negative was locally reduced. The negative was enlarged in the usual way and developed with Pyro; reduced the background to nearly clear glass, then worked in the background on ground-glass substitute on the back of the negative, working in the design with crayon and etching knife. The etching was done, of course, on the surface film side. (See Page 480.)

Study No. 52. By W. H. Partridge, Boston, Mass. Subject, "Cupid." This picture was made in an operating-room 30 x 40 feet; style of light used, top and side; size of light used, side 16 feet wide and 4 feet high, with a 14 x 16-foot top light; lens used Voigtländer; stop used, almost wide open, exposure given, 1 second; plate used, Cramer Crown; developer, Pyro; printing process, Willis & Clements Platinum. The wings were etched on the negative with an etching knife. (See Page 485.)

Study No. 53. By A. T. Proctor, Huntington, W. Va. This picture was made in an operating-room 18 x 35 feet; style of light was top and side; size of light, 14 x 14 feet. Light was used wide open with screens for controlling. The lens used was a Dallmeyer; plate used, Seed's 26x developed in Pyro with no after manipulation; paper used, Sepia Platinum paper. (See Page 486.)

Frontispiece.—Portrait by F. Benedict Herzog, 1847 Broadway, New York. Subject, "A Tale of Isolde." This group picture was made in a room about 20 x 40 feet, with a small, flat skylight in the roof, facing north, about 7 x 10 feet, and two small side windows, facing east, 4 x 6 feet, running lengthwise quite near the ceiling. The picture was made at 3 P. M., in the month of June. The skylight was diffused with muslin curtains; side windows were used without diffusion. The subjects were arranged almost facing the light. Lens used was Dallmeyer, of 14 inch focal length, stopped to 8.5; exposure, 5 seconds; plate used, Cramer Crown; developer,

Metol-quinol. The plate was locally reduced after development.

The accessories used in arranging this group consisted of a small table and a few stools of different sizes. The subjects were arranged and draped in accordance with the story, the materials employed being selected from a variety of antique draperies, beads, cords, etc., of different colors, which I have provided for such requirements.

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